

# Rock Products

DEVOTED TO  
Concrete and Manufactured  
Building Materials

Volume XI.

CHICAGO, ILL., OCTOBER 22, 1911.

Number 4.

**CAROLINA PORTLAND CEMENT COMPANY**

We are the largest distributors of Portland Cement, Lime Plaster, Fire-brick and General Building Material in the Southern States, and have stocks of Standard Brands at all of the Atlantic and Gulf Seaports, and at our interior mills and warehouses, for prompt and economical distribution to all Southern territory. Write for our delivered prices anywhere. Also Southern agents for the "Dehydrated" waterproofing material. "Universal," "Acme" and "Electroid" Brands Ready Roofing. Get our prices.

Charleston, S. C. Birmingham, Ala. Atlanta, Ga. New Orleans, La.

**DEXTER** Portland Cement  
THE NEW STANDARD

Sole Agents **SAMUEL H. FRENCH & CO.** Philadelphia

**UNION MINING COMPANY**

Manufacturers of the Celebrated

**MOUNT SAVAGE**  
FIRE BRICK  
GOVERNMENT STANDARD

DEVOTE a special department to the manufacture of Brick particularly adapted both physically and chemically to

**Lime Kiln and  
Cement Kiln  
Construction**

Large stock carried. Prompt shipments made. Write for quotations on Standard and Special shapes, to

**UNION MINING CO.,**  
Mount Savage, Md.

CAPACITY, 60,000 PER DAY.  
ESTABLISHED 1841.



**Phoenix Portland Cement** UNEXCELLED FOR ALL USES.  
Manufactured by  
**PHOENIX PORTLAND CEMENT CO.**  
NAZARETH, PA.

Sole Selling Agent, **WILLIAM G. HARTRANFT CEMENT CO.**  
Real Estate Trust Building, PHILADELPHIA, PENNSYLVANIA.

**Ottawa Silica Co.'s Washed White Flint Sand**

Is used for sawing stone in more than a dozen states. Cuts more and lasts longer than any other sand on the market. Unexcelled for Roofing, Facing Cement Blocks, White Plaster, etc. Freight rates and prices on application.

**OTTAWA SILICA CO.,** Ottawa, Ill.



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Branches:

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**PURE OAK TANNED LEATHER BELTING**

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**FOR  
DAMP  
PLACES**

**LOOK!!**

This Space

**LOOK!!**

For Sale

**LOOK!!****HARBISON-WALKER**  
LIME AND CEMENT KILN LININGS

**YOU** know what the linings for your cement and lime kilns cost per thousand brick but do you know how much per ton output? That is the cost that is vital, that's why we are anxious you should know. Write us.

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PITTSBURGH :: PENNSYLVANIA

**HIGHEST GRADE  
PORTLAND CEMENT  
MANUFACTURED**



CAPACITY  
1,000,000 BARRELS  
YEARLY

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A Chance to Secure Space on Our Front Cover Will Not Occur Again in Years

## The Ironton Portland Cement Co.

Manufacturers of the  
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Used by the Railroads in Kentucky, Ohio, West Virginia, and Virginia during the past five years. Cement as finely ground as any on the market. Guaranteed to pass all the standard specifications.

Plant located at Ironton, O., within easy access to seven States, namely, Ohio, Indiana, Kentucky, West Virginia, Virginia, Tennessee and North Carolina.

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Stone Crushing Cement and Power Plants

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"THE BEST IS NONE TOO GOOD"  
**HIGHEST GRADE of  
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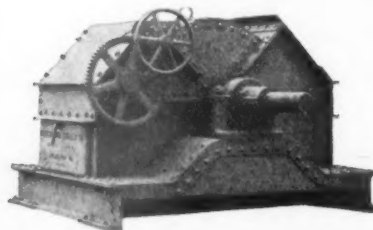
Every Barrel Absolutely Uniform.

R. R. facilities especially adapted  
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Capacity 1,500,000 bbls. Yearly.

**NORTHWESTERN STATES PORTLAND CEMENT COMPANY**  
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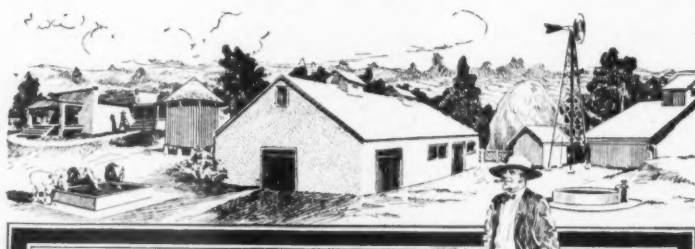
## "PENNSYLVANIA" HAMMER CRUSHERS



For Pulverizing Limestone, Lime, Cement Rock, Marl, Shale, Etc.

Main Frame of steel, "Ball and Socket" Self aligning Bearings; forged Steel Shaft; Steel Wear Liners; Cage adjustable by hand wheel while Crusher is running. No other Hammer Crusher has such a big Safety Factor.

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## The Best Engineers Now Use Concrete

They know that concrete is the strongest and safest building material. Cement is an important factor in all concrete work. It must be up to standard. The conditions under which

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is manufactured have set the highest standard in the cement industry. If you handle Lehigh you can be sure of giving your customers a cement which will always be right.

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There's one "best" in every line, but that is not always best for everyone concerned. In the building trades

## Ricketson's Mineral COLORS

are acknowledged to be the best choice for everybody. Best for the architect because purest. Best for the contractor because they go farther. Best for the owner because they never change their color.

For Mortar, Brick, Cement, Stone, Etc.  
Red, Brown, Buff, Purple and Black

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# Rock Products

DEVOTED TO  
Concrete and Manufactured  
Building Materials

Volume XI

CHICAGO, ILL., OCTOBER 22, 1911

Number 4

## PROBLEMS OF THE PANAMA CANAL

Some of the Questions, Material and Economic, that Have Been Raised By the Near Approach of the Time When the Great Waterway Will Be Opened to Commerce.

The approaching completion of the Panama Canal and the fact that it is the lock type with immense dams and reservoirs is attracting much attention in connection with the recent disaster at Austin, Pa., where a great concrete dam gave way. While it is true that the Gatun dam is vastly larger than that at Austin it is also true that it will have to withstand the pressure of a much greater volume of water. Members of the staff of the Isthmian Canal Commission in Washington decline to make any comment on the breaking of the Austin dam and content themselves with the general assertion that the work at Panama is being done in a manner that will preclude the possibility of any similar collapse. When the canal was first planned there was a long controversy between the advocates of a lock type and those of a sea level type. The former won but there still remain many engineers who believe that a better canal would have been secured if the sea level type had been adopted.

The great Gatun dam has always been a subject over which the army engineers have displayed much nervousness, and it has been claimed that borings have shown an exceedingly pervious condition of the underlying rock. It has recently been alleged that the flow of water from one test hole to another has been such as might readily with 85 feet pressure on one side, undermine and carry out the dam. There have also been earthquake shocks and the possibility is always present

that a fissure may result from a slight earthquake shock which would wipe out the dam. In a savage attack on the construction of the canal, Henry G. Granger of New York, says: "If the lake should hold water, the Gatun dam, whether from earthquake or leakage, will eventually go out and the appalling loss of life from the Bayless dam would be but a trifle compared with the wiping out of Colon by the rush of waters from 160 square miles. Owing to the absence of constructive forces and apparatus in the event of the failure of the Gatun dam, which is openly condemned by many of the world's greatest engineers, and regarded with suspicion by the army engineer in charge, at least two years would be required to reopen it for the traffic that might be built up by its use and depending on it for its existence. This paralyzation of traffic would entail serious commercial troubles and possibly be the cause of widespread panic."

The force of the water upon the Austin dam was sufficient to break it into huge blocks of concrete and moved some of these blocks weighing thousands of tons, a considerable distance from their base. Whether such an accident is possible with the Gatun dam is the subject of a difference of opinion on the part of engineers. The Gatun dam, which will form Gatun Lake by impounding the waters of the Chagres and its tributaries, will be nearly  $1\frac{1}{2}$  miles long, measured on its crest, and nearly half a mile wide at its base. It will be about 400 feet wide at the water surface and 100

feet wide at the top. Its crest will be at an elevation of 115 feet above mean sea level, 130 feet above the normal level of the lake. Of the whole length of the dam, according to calculations of army engineers, only 500 feet, or one-fifteenth part of the whole, will be exposed to the maximum waterhead of 85 feet. The interior of the dam is formed of a natural mixture of sand and clay, dredged by hydraulic processes from pits above and below the dam and placed between two large masses of rock and miscellaneous material obtained from steam shovel excavation at various points along the canal. The top and upstream slope will be thoroughly rip-rapped. The entire dam will contain about 21 million cubic yards of material.

The spillway is a concrete line opening 1,200 feet long and 300 feet wide cut through a hill of rock nearly in the center of the dam, the bottom of the opening being ten feet above sea level. It will contain about 225,000 cubic yards of concrete. During the construction of the dam, all the water discharged from the Chagres and its tributaries is flowing through this opening. When construction is advanced sufficiently to permit the lake to be formed, the spillway will be closed with a concrete dam fitted with gates and machinery for regulating the water level of the lake.

Gatun Lake will impound the waters of a basin comprising 1,320 square miles. When the surface

[Continued on page 48.]



CULEBRA CUT, LOOKING SOUTH.—DECEMBER, 1910.

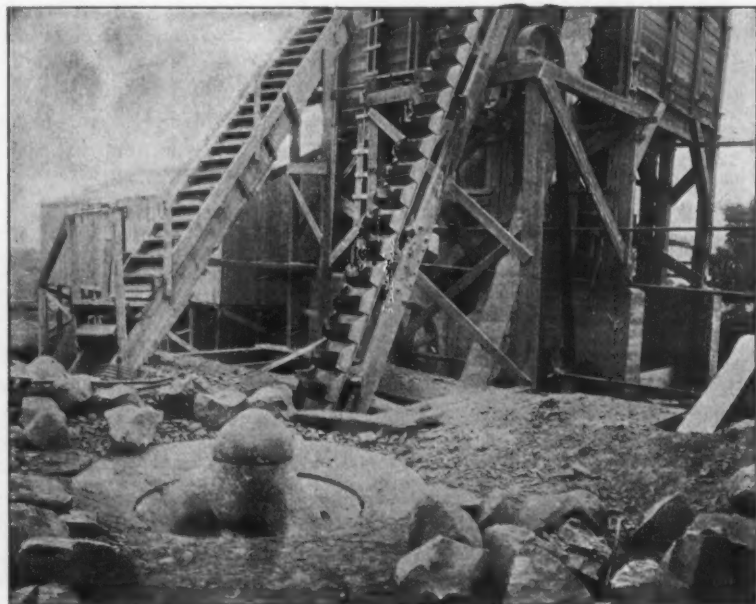


MIRAFLORES UPPER LOCKS, LOOKING EAST, FROM WEST BANK, SHOWING PORTION OF LIFT SILLS.—MAY 6, 1911.

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On the Panama Canal . . . . . 80 per cent.  
 On the Catskill Aqueduct . . . . . 75 per cent.  
 On the New York State Barge Canal, 50 per cent.  
 of all the ROCK CRUSHING is being done with

## McCULLY GYRATORY CRUSHERS



McCully Gyratory Crushers at Work on the Catskill Aqueduct Near Newburg, N. Y.

Of course these are exceptionally large jobs.

That is just why we mention them. There are a great many different contractors involved and it is evident how many of them agree as to which is THE crusher. Moreover it is for such large jobs that the greatest care is taken to select the BEST crusher. Only the best is good enough.

On small jobs this is not so important. But—we could go on and give a long list of smaller jobs where our crushers are the ONLY ones used.

If you want to know WHY the McCully Crusher is preferred to all others, send for our bulletin PM-458.

## Power & Mining Machinery Company

Cudahy, (Suburb of Milwaukee) Wis., U. S. A.

District Offices: New York, Chicago, Birmingham, El Paso, San Francisco

WESTERN SALES OFFICES: United Iron Works, Spokane, Wash.; Moran Engineering Company, Seattle, Wash.

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Rock Crushing Machinery  
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Cement Making Machinery  
 Loomis-Pettibone Gas Generators

PM136.8

Could Anything Be More  
 Convincing of Their Merits?

Over 50 McCully Crushers  
 Are Being Used at These Three  
 Places Alone.



McCully Gyratory Crusher—Standard Discharge  
 (Showing Bottom Dropped.)

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## "Forgot to Oil It—"

**There Is Only  
One Crusher  
with an Automatic  
Oiling System**

The oft-repeated story of the man whose plant is out of order. Don't rely on memory, and you'll avoid expensive shut-downs. In the Symons Breaker, lubrication is automatic. The oil pump's memory never fails. Read the rest.

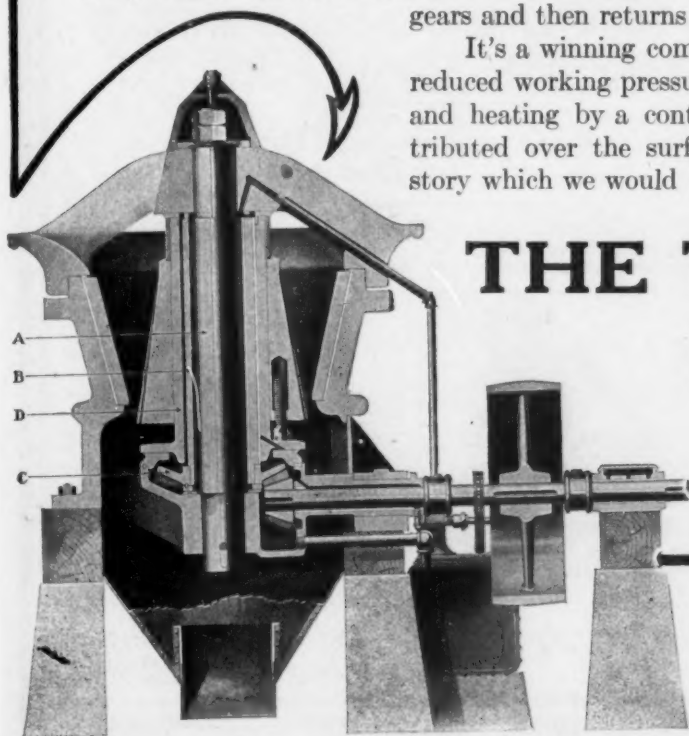
*The Crusher's Life Blood is Oil.*

Rock breakers work under most trying conditions, continually enveloped in a cloud of dust. It is very difficult, even with the "tightest fit," to exclude dirt from the running parts. The bearings are subject to immense pressures, very irregularly applied. When you add to these unfavorable conditions the further danger of careless supervision, any mechanic will admit the vital importance, to the practical quarryman, of the automatic oiling system peculiar to the

# SYMONS CRUSHER

The oil pressure excludes the dirt. Where oil cannot get out, dirt cannot get in. The steady flow of oil (volume variable to suit conditions) washes the bearings clean, smooth and cool, immerses the gears and then returns to the tank to be used again.

It's a winning combination—only two big bearings, carrying a greatly reduced working pressure, guarded from dirt and protected from wearing and heating by a continuous oil-flow, with the working load evenly distributed over the surface of the long eccentric. But that's not half the story which we would like to tell you. Write for our catalogue No. 166.



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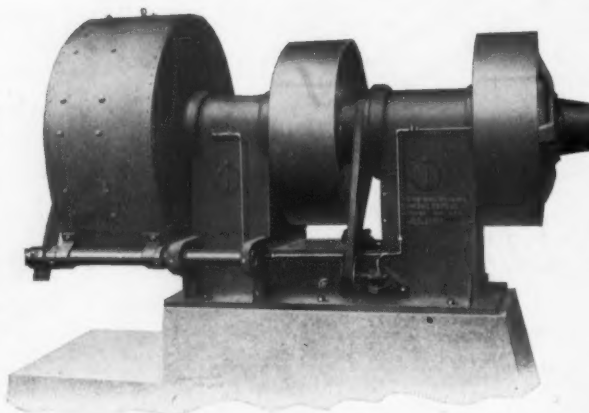
1322 MAJESTIC BLDG.  
MILWAUKEE, WIS.

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These are the **only** machines which rapidly crush smooth, wet boulders, even when mixed with sand, without slippage or choking.

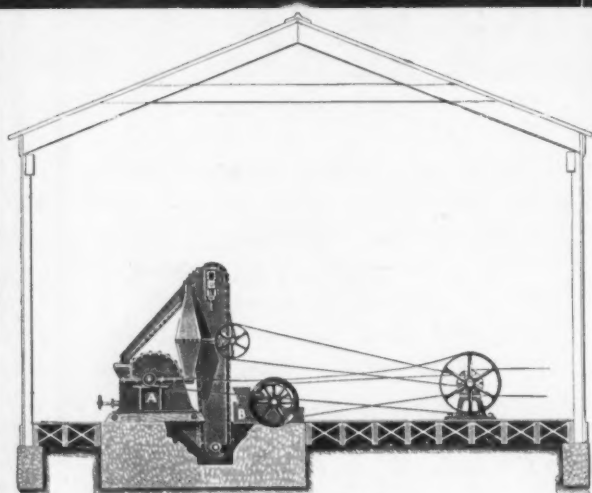


A Single Disc Crusher takes and reduces all the rejections from any gyratory breaker below a No. 10. Think that over!

Built in Five Sizes

*Exceptional Durability. Ask the Users.*

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MILWAUKEE, WISCONSIN**



Stationary Plant

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**GRIND YOUR LIMESTONE SCREENINGS  
AND MAKE LIMESTONE FERTILIZER**

What Is Now a Dead Loss to Some Quarrymen  
Can Be Turned Into Good Profits

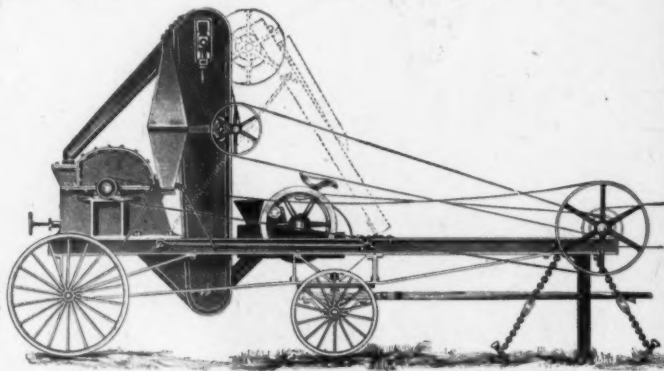
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We now have over 30 plants in operation

BULLETIN NO. 4 EXPLAINS THE  
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**The Williams Pat. Crusher &  
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ST. LOUIS: 2705 N. Broadway  
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Portable Plant

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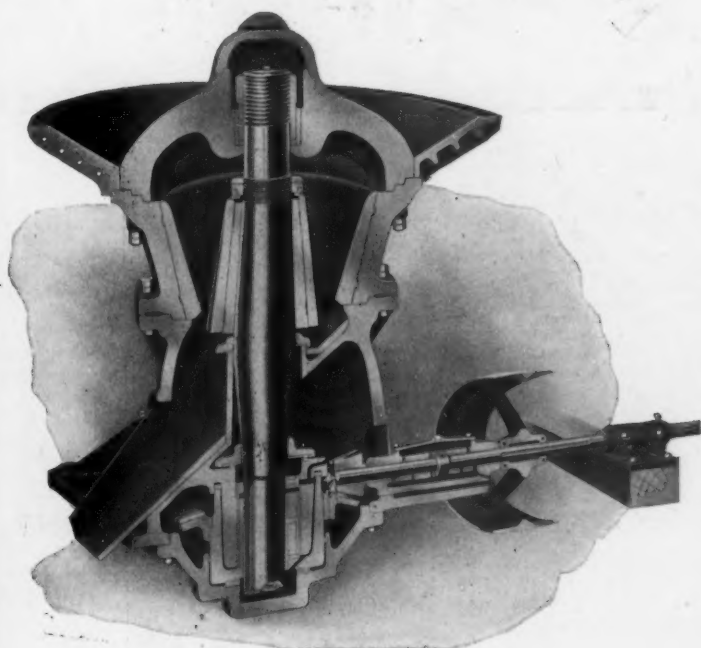
WORKS: Allentown, Pennsylvania

AGENTS: Marsh Co., Old Colony Building, Chicago

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## Traylor Gyratory Crushers



are equipped with improvements which make them the most economical crusher on the market.

Shaft suspended at point of least motion. Concaves removable without disturbing hopper or spider.

Eccentric bearing designed with increased area and completely immersed with oil. It is also supported by the main frame through diaphragm cast integral with frame. With this construction the eccentric troubles are entirely eliminated.

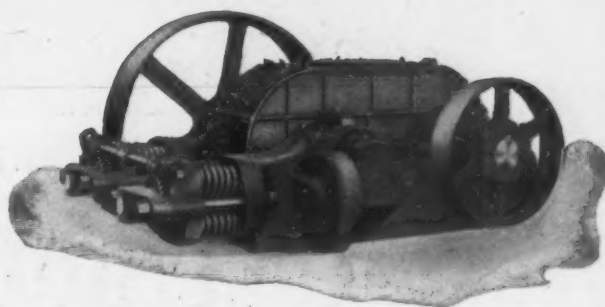
*Send for Catalog Describing the Above*

## Traylor Improved Heavy Duty Crushing Rolls

are fitted with automatic side adjusting mechanism which prevents corrugating of the roll shells and thereby increases your capacity 25 per cent.

The bearings are filled with removable bushings, babbitted, entirely protected, making same absolutely dust-proof.

Specially adapted for crushing all kinds of rock or stone for use as sand or for fertilizer.



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# Triangle Mesh Concrete Reinforcement



Winch Building, Vancouver, B. C.

Triangle Mesh reinforcement used.

Made by  
**American Steel & Wire Co.**

**CHICAGO, NEW YORK, DENVER, SAN FRANCISCO.**

WRITE FOR ILLUSTRATED PAMPHLET

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# Plant Improvements

## BEFORE WINTER SETS IN

You want the new Warehouse, Oil House, or Boiler and Engine House completed

## GET BUSY RIGHT NOW



Concrete  
Tile  
Lasts  
Forever;  
It's  
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TYPE OF TILE AND CONCRETE BOILER HOUSE Size 20x38 feet, and 14 feet high.  
Complete bill of tiles furnished for this or similar building for \$175.50.

### BUILD WITH CONCRETE HOLLOW TILES AND ELIMINATE REPAIR BILLS

We sell all sizes and shapes that are needed in the construction of every type of building, and offer at this time tiles for an

## 8 INCH WALL AT 12 CENTS PER SQUARE FOOT

Delivered on your siding in the Chicago Industrial District

Telephone Call, Harrison 8088, For Quick Action

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537 South Dearborn St., Chicago, Ill.

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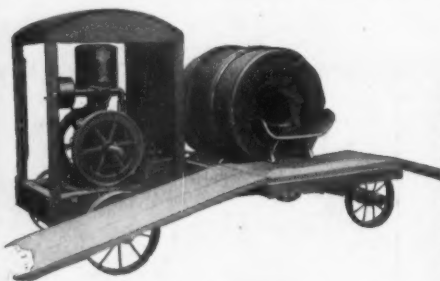
## TO ANY ONE WHO WILL INVESTIGATE

There is a Fact That Compels Conviction That  
The Eclipse Low Charging Concrete Mixer

## SAVES MONEY

Saves in the first cost of the machine, saves in power, saves in fuel, saves in manual labor, saves in attendance of the machine, saves in portability, saves in delays and saves in repairs.

Figure all of this saving and the aggregate saving is so important that the greater economy must be evident to you.



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We carry a stock of about 100 Eclipse Mixers at our factory, branch houses, ware rooms, stores and sales agencies ready for immediate shipment the day your order is received. And don't forget that the Eclipse Mixer is cheapest to buy, cheapest to operate and cheapest when you have figured all the expense when the season's work is through.

Catalog No. 33 describes it. Shall we send the catalog?

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Ceresit Waterproofing Was Used in this Apartment Building, 4639 Beacon Street, Chicago.

the Ceresit into every portion of the mixture and uniformly permeates the entire mass. When Ceresitized Cement is set it is impossible for water to penetrate the concrete or cement mortar.

## "Ceresit" Waterproofing

is guaranteed to be a uniform permanent water repellant on any sort of concrete construction such as tunnels, reservoirs, dams, foundations, swimming pools, bridges, viaducts, aqueducts, water tanks and towers, walls, cellars, floors, boiler pits or roofs. Ceresit is just as efficient when incorporated in cement mortar used on structures, built of concrete, brick, stone, tile, and on buildings whose surface is of stucco or cement plaster.

Ceresit is guaranteed to be a satisfactory waterproofing on any work done under our direction.

Please write for Book "J" and try Ceresit on your next job.

Ceresit is catalogued on Sweet's Index, pages 46 and 47.

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133 South Clark Street, Chicago, Illinois

BRANCHES—1133 Broadway, New York; 1216 Chestnut St., Philadelphia, Pa.



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## SHERWIN-WILLIAMS CONCRETE FINISH

is not a linseed oil paint but a specially made preparation that spreads easily over concrete surfaces filling and sealing the pores, hardening the surface and effectively preventing the absorption of moisture. Its use on concrete floors puts an end to the dangerous dust that is always a menace to health, machinery and merchandise. It wears splendidly under hard service and the colors are very attractive and durable.

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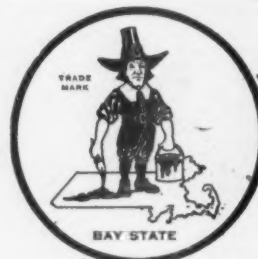
its free on request and contains color samples finished with the actual goods. It describes their uses and application. Mail a post card now while you have it in mind.

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CONCRETE or STUCCO CONSTRUCTION  
REQUIRES PROTECTION WITH

The Original

## BAY STATE

## BRICK and CEMENT COATING

Discoloration and damage from dampness are absolutely prevented by this coating. It has been endorsed by the National Board of Fire Underwriters as a fire retarder and is not affected by acids or smoke.

It can be used as an interior tint or decoration.

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## BRICK and FLOOR CEMENT COATING

wears well and can be washed and prevents dusting. Is used with great success in hospitals and other places where sanitary requirements are necessary.

Let us send you a book which tells you all about it. Please mention this medium. Address

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Paint and Varnish Makers and Lead Corroders

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**Capacity**  
**8000 Barrels**  
**Per Day**

**MAIN OFFICE:** Huntington, Ind. **Branch Offices:** Marion, Ohio.

"IF IT IS

# LIME

WE MAKE IT"

**Lump - Barreled - Hydrated - Ground**  
**STRONGEST IN OHIO**

We are not connected with any Trust or Combination

WRITE US  
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**The Scioto Lime and Stone Company, Delaware, Ohio**

# CROWN HYDRATE

HIGH CALCIUM HYDRATED LIME

At present prices you can waterproof, improve the color and strengthen the texture of all cement construction and actually save money, because the Hydrate replaces the same amount of cement (15 to 25%).

**Kritzer Vacuum Process**

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# Banner Hydrate Lime

HIGH MAGNESIA FINISHING LIME

Manufactured by the

## National Mortar & Supply Company

Office at Pittsburg, Pa.

Works at Gibsonburg, Ohio

**Enlarged capacity**

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### Hydrated Finishing Lime

**The Standard by which all Other Brands are Measured**

A safe, dependable product. Dealers who handle it are bound to have the best plastering trade on their books. May we send you a quotation?

THE  
**Kelley Island Lime & Transport Co.**  
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## MITCHELL LIME

Is Chemically Pure and Practically Free from Waste

The Strongest White Lime on the Market. Used and recommended by Sand-Lime Brick Manufacturers, Chemists, Soap and Glue Works, Plasterers and Masons.

Prices Cheerfully Submitted

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Bulletin No. 42

## When Do You Intend to Install That Hydrating Plant?

*Can you afford to neglect doing so any longer? You know, we all know that a general use of hydrated lime will increase the lime business many fold.*

The dealer must have a product that can be held in stock indefinitely. The dealer must make a legitimate profit. He must be able to depend upon doing so. He is not willing to push any commodity on which the profit is a gamble. Can you blame him? There are thousands of dealers throughout the country. How much lime do they sell? Is it not to your interest to make it to his interest to handle more?

If every dealer was informed of the manifold uses of Hydrated Lime, was told whom to sell, who were his legitimate customers, such as the tanneries, the grease works, the chemical works, etc., (Oh, the list is too long to particularize, but we merely wish to mention a few lines that he now ignores), do you not think he would handle more lime than he does now? Would he not buy in larger quantities, get better prices and better rates, when there is no possibility of his product deteriorating by holding?

### It is Only a Question of Time

when you **will** install a Hydrating Plant. It is to your interest to do so. It costs no more to make Hydrated Lime than quick Lime. The cost of installation is not heavy. The increased sales will soon pay for the cost of installation, then

### Why Hesitate

Why put this off any longer? If a campaign of publicity was entered upon by the lime manufacturers, exploiting Hydrated Lime, if every dealer in the country was fully informed of all its uses, the demand for lime would be increased to such an extent that it would be simply impossible to meet it with the present facilities. Every lime manufacturer knows this, or should know it. He would know it if he investigated the subject thoroughly, and it is our purpose to induce him to do so.

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also reaps many benefits by using Hydrated Lime. By its use

The concrete works easier under the trowel, hence It is a time saver, and consequently

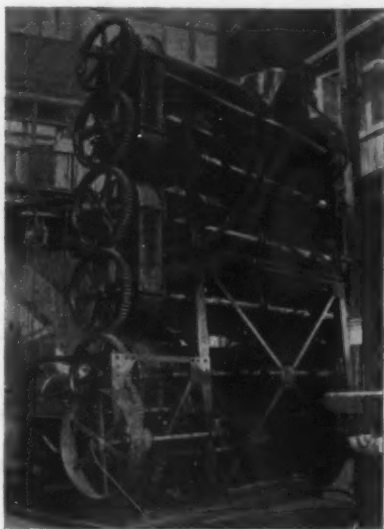
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It makes the concrete impervious to water.

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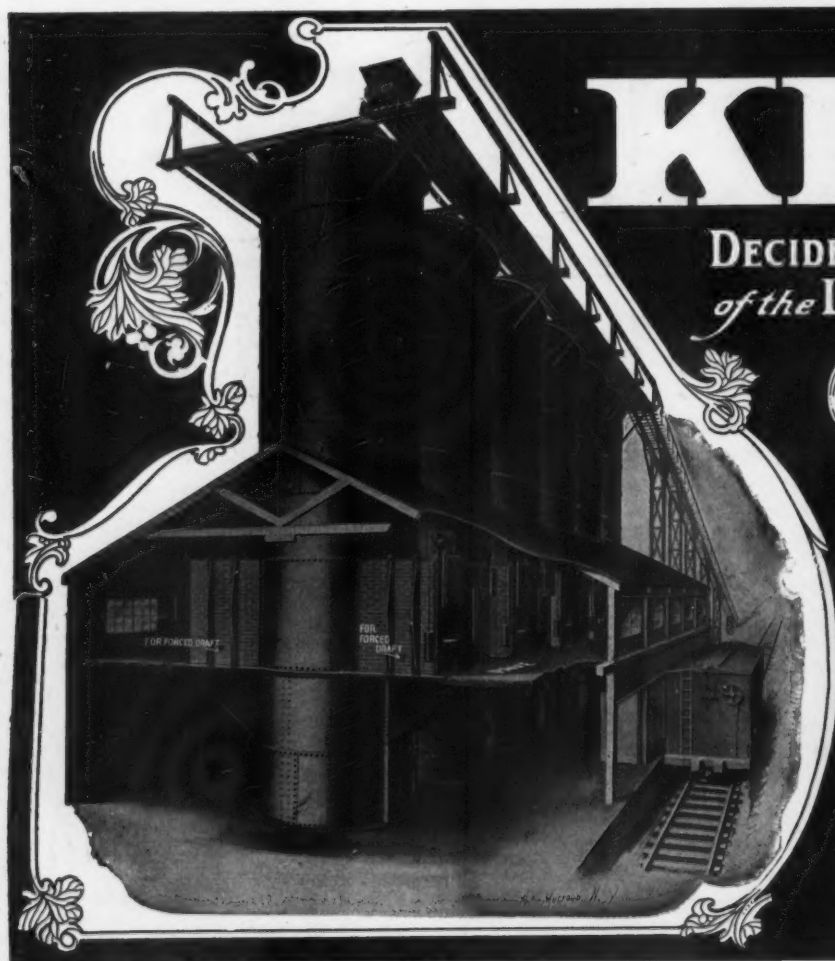
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It needs no  
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Monarch Hydrated Lime offers you many good and sufficient reasons why you should *now*, once and for all, abandon the use of the old, obsolete lump; the lime of other days, those golden (?) days we read about when progress was at a standstill—and cling fervently to the modern way—Monarch Hydrated Lime.

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is better and cheaper than lump lime—you save money and get a better article.

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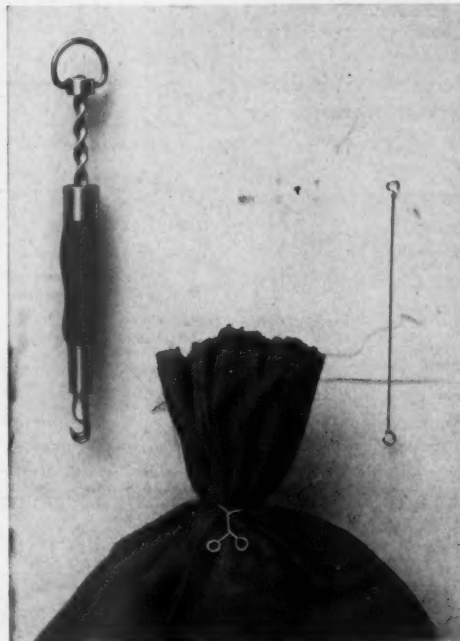
As manufacturers of MONARCH HYDRATED LIME our location is supreme, our product is superior, our prices are low, you save money and get a better article—and get it quick.

Let us put information in your hands which will prove to you conclusively that Monarch Hydrated Lime is the modern method, the progressive one, the profitable one for you. Write us to-day.

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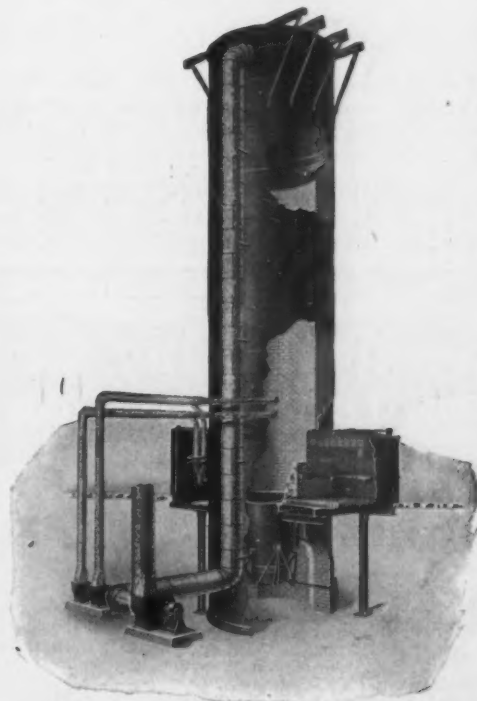
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EVERY TIME**

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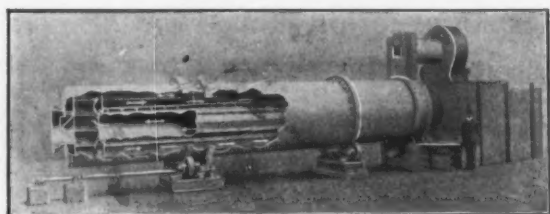
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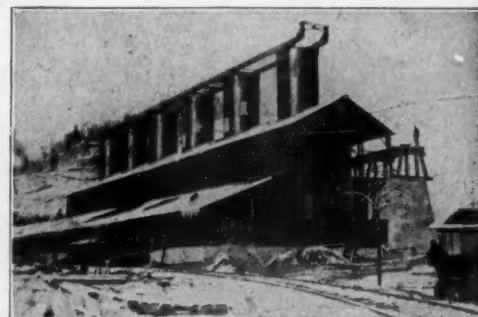
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# ROCK PRODUCTS

ESTABLISHED IN LOUISVILLE, KY., 1902.  
DEVOTED TO CONCRETE AND MANUFACTURED BUILDING MATERIALS.

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At the recent drawing of spaces at the three great cement shows at New York, Chicago and Kansas City the fact was clearly demonstrated that the interest is keener than ever and in all probability the shows will be far ahead of any yet given in point of superiority of exhibits and general interest.

Government reports showing the condition of the cement, lime and plaster industries in the year 1910 have been issued. A careful study of these statistics will give those in the various industries much food for thought and emphasizes more than ever the great work which the various organizations have before them.

The sand and gravel producers have a movement on foot to form an organization. Such an organization will be of inestimable benefit to the industry at large. Several spasmodic efforts have been made in the past, but the present movement seems to have the endorsement of the leading men in the industry and success seems to be assured. The time and place of the first meeting has not yet been announced.

Now that the National Builders' Supply Association has decided to hold its next annual convention at New York City during the cement show it is up to the members to stir up the necessary enthusiasm to insure a large attendance. There is no doubt that the move is a wise one and will result in the largest attendance in the history of the organization. During the cement show at Madison Square Garden in New York City last year many retailers of builders' supplies were in attendance.

The National Federation of Retail Merchants was formally launched at the La Salle Hotel in Chicago last week. A poll showed that there were represented 233,000 retailers of various kinds. Thirty-five states were represented. It will thus be seen that the gathering was truly representative. The importance of this movement can not be overestimated. The need for such an organization is too well understood to need comment here. That the association will succeed in its laudable purpose goes without saying.

The picking up of business in the building field was a little late in coming this year, but it has reached us now and from the number of prospects in sight everywhere it looks like a bright future.

It is true that crop failures in some portions of the country cause a justifiable discouragement over the business prospects in certain localities, but this is not generally true of the country as a whole, for in many sections things never looked brighter than they do now. Furthermore, a crop failure does not mean such a serious catastrophe to the farmer today as it did a few years ago, for most of them have reached a point where they have plenty laid away and business does not stop when they have an "off year."

The National Association of Cement Users have decided to hold their next annual meeting at Kansas City during the cement show. This will give the western members of the association an opportunity to turn out in great numbers. It should also result in a tremendous increase in membership as many of the most enthusiastic concrete workers are within easy reach. Kansas City, owing to its favorable location, is a great railroad center and is within a few hours' ride of a great many cities, not only in the West but in the Southwest, South and Northwest as well. The association is the most potent influence today in the development of the great concrete industry. While it has accomplished a great deal in the past it still has a great work ahead of it in the standardization of materials and practice.

The Interstate Commerce Commission has done a world of good for the business conditions of the country. Even the railroad corporations who strenuously objected at first to the government giving to a commission the authority to regulate their rates now unite in praise of the results accomplished by that commission, for it has established a standard. They know where they are at and if they are in doubt at any time, there is a central bureau for the railroads to go to where they can find out what they can do and what they cannot do and still remain within the meaning of the law. What a difference there is between this condition and the uncertainty which surrounds every other combination of capital or industrial organization! In the latter cases all they can do is to go ahead upon the lines which they think are right, and if they prove to be wrong, the notification of the fact is a body writ which lands them behind the bars. How much more just would be the establishment of a commission on corporations similar to that which regulates our interstate commerce, a commission whose powers would enable it to insure a living profit for all and prevent "highway robberies" from being perpetrated by any. This seems to be the only reasonable solution of the present conditions.

The world has been startled recently by the great loss of life and the destruction of property by the breaking of a great concrete dam at Austin, Pa. The claim has never been made by this publication or any other friend of concrete that it is fool proof. No material under heaven is proof against faulty design or carelessness or ignorance in handling. The facts concerning the Austin dam appear to point the truth that the structure was faulty in design and faulty in construction. The enemies of concrete will now hasten to point to this disaster as an example of the foolhardiness of employing concrete in construction. The simple fact of the matter is that the Austin dam would have gone out if the material composing it had been stone, brick, steel or any other material. The foundations were undermined and therein lies the fault in construction. But even with this fault the dam would be in position today, it seems clear, if the structure had been designed in the form of an arch, the pressure coming upon the extradosal side. All dams should be of the arch formation, as is the case with the great dam of the Shoshone. But as to the cry that will go up from some quarters in this instance against concrete, if you examine the source of it you will find it comes from some interest with which concrete is in competition.



# EDITORIAL CHAT

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Frank B. Cleveland, manager of the Cleveland Silix Stone Company of Detroit, Mich., died at his home after a week's illness, with pneumonia.

The Washington Portland Cement Company, of Seattle, Wash., in a recent letter say: "We enjoy and appreciate Rock PRODUCTS very much."

The interest of W. C. Haise in the Niles Art Stone & Construction Co. at Niles, Ohio, has been bought by the other stockholders and B. K. Belin has been advanced to the position of manager to succeed Mr. Haise, who has gone to Denver, Colorado, as superintendent of the Tidewater Building & Construction Co. of New York City, which maintains a big office there.

Arthur N. Fitzsimmons, for the past five years general sales manager of the T. L. Smith Company, of Milwaukee, manufacturers of concrete mixing machinery, was killed by a fall from the window of his sleeping apartment on the third floor of the Waverly apartment. Mr. Fitzsimmons had been ill following an accident received on his vacation some time before, and it is supposed he had gone to the window for air. He was 44 years old.

W. B. Babbitt, manager of the Wheeling Limestone Company, of Meadow Creek, W. Va., has resigned his position to take up a contract with the Sewell Valley Railroad Company to crush 50,000 yards of ballast. He says in a letter: "I can't do without Rock Products."

J. C. Van Doorn, the northwestern sales manager of the Universal Portland Cement Co. at Minneapolis, is justly proud of a handsome watch and chain which was presented to him in recognition of his valued services in behalf of the National Sales Managers' Association, of which he was re-elected secretary. The presentation was made at a banquet after the closing session of the association. Mr. Van Doorn is a charter member and an officer of the Minneapolis Salesmen's Association, and helped the St. Paul delegation land the convention for next year.

David M. Kirk, president of the Crescent Portland Cement Company, Wampum, Pa., in a recent communication says:

"Permit me to say that I consider your publication possibly the best by far that has to do with the cement and concrete business of which I have any knowledge."

## [FIREPROOFING.

Architects Discuss Problem Confronting Chicago on Anniversary of the Great Disaster of 1871.

The necessity of fireproof buildings was emphasized Monday evening, October 9, at a meeting of the Illinois chapter of the American Institute of Architects at the Art Institute in Chicago. The occasion was the fortieth anniversary of the Chicago fire.

Two significant statements were made by D. H. Burnham, the eminent architect and one of the principal speakers. He said that the business district of Chicago and all other large cities is constantly menaced by the danger of a conflagration from the inflammable districts that surround them. He said further that no building is fireproof against dangers from without—it is only fireproof from within, that is, from fires that originate in it and are confined to it.

President Peter B. White presided and introduced the speakers, among whom, besides Mr. Burnham, were Building Commissioner Erickson, of Chicago; Chairman Thompson, of the City Council Committee on Buildings; William L. Ellis of the Building Managers' Association, and Surveyor Matthews, of the Chicago Board of Underwriters.

Mr. Matthews said that the architects feel their responsibility in preventing a repetition of the disaster of 1871, and to that end he favored the organization of a fire prevention bureau under the auspices of the municipality. This bureau would have authority over the storage of powder, films, oils, the accumulation of dangerous rubbish, fire escapes, the limitation of the number of employees to certain floor space, sprinklers, and authority over all matters relating to fire prevention.

Chairman Thompson, of the Council Committee on Buildings, said it was his desire in the new building code to provide for a higher standard of building inspectors. He thought a more intelligent class of building inspectors would be along the line of fire prevention. A recent addition to the fire prevention measures was the matter of a more rigid inspection of theaters and public buildings. Another matter that it was difficult to govern was that while a building might be used for a certain purpose for a time as allowed by the building department, the occupants could move out and the building might be used for a hazardous purpose without the knowledge of the department.

William L. Ellis, of the Building Managers' Association, advocated a high pressure water system for the downtown district. He regretted that provision was not made for this system before the streets were torn up for repaving.

Frank B. Chase, of the City Club, declared that public sentiment is in favor of better and more substantial construction, and it was his opinion that the city limits should be the fire limits. He declared that fireproof construction was cheaper in the long run than wood. He spoke of the enclosed tower that is being built on many buildings in the east, particularly Philadelphia, in which the fire escape is placed. He said that it was the ideal fire escape. Openings are provided in the tower at each floor, and those on each floor can enter the tower through an iron doorway and proceed down the stairs to the ground, all the time protected by the fireproof walls of the tower. He declared there are hundreds of buildings in the loop district of Chicago whose floors will not carry a weight of ten pounds to the square foot. The minimum on all floors should be forty pounds. He advocated a wholesale condemnation of these buildings and their replacement with substantial fireproof structures so that human life and property would be safe. Commissioner Chamberlain of Springfield, favored a codification of the state building laws in order to secure uniformity of action and cooperation. He said in the San Francisco fire was seen the wisdom of concrete construction, as it was found that concrete buildings were the only ones that withstood the onslaught of flames. He advocated the abolition of frame buildings.

Daniel H. Burnham said that in the Baltimore fire one modern structure of steel and concrete stood, and that in the San Francisco fire twelve such structures stood, while the glass in them melted and disappeared. "But a building is only fireproof as to what occurs in the building," he said; he would prohibit combustible buildings in congested districts; he thought the rebuilding of the parts of the Chicago business district where there are yet many inflammable buildings should spread over a period of twenty-five years. He spoke of the invention of the concrete caisson by Sooy Smith and how it had revolutionized the building of large structures. He gave a number of interesting reminiscences of his professional experience.

## History Makers of the Building Material Industry

Among those whose names stand out prominently among the makers of building material history, none shines so brightly as W. B. Hill, one of the pioneers in the manufacture of high-grade lime, and later as a producer of a Portland cement as well. Mr. Hill has been actively identified with the lime business for over a quarter of a century, in fact, as he puts it himself, he began pounding rock in 1881, and has been at it ever since.

Mr. Hill was born in Covington, Ohio, in 1854 and moved to Pontiac, Ill., in 1856. Shortly after the Civil War, or in 1876, he came to Carthage, Mo., which was then considered far west. Ten years later he moved to Kansas City and has lived there ever since. He formed the Ash Grove Lime Company, and laid the foundation of a successful career as a manufacturer of lime by establishing kilns to burn the Burlington limestone, which abounds in the southeastern part of the state of Missouri. This deposit is one of the finest in the country, and soon the fame of Ash Grove lime extended over a wide area. The main plant of the company is at Ash Grove, where there are eleven kilns and a complete hydration plant. At Everton there are three kilns, at Galloway two, and at Greenfield and Carthage, one each. The output of all these kilns has been marketed from Kansas City.

Several years ago Mr. Hill organized the Ash Grove Lime & Portland Cement Company, and erected a Portland Cement plant at Chanute, Kan. Mr. Hill as president of the company is a dominant figure in the business world of Kansas City. "Uncle Billy," as he is affectionately known among his close friends, is modest, as befits a really successful man. His home life has been an ideal one. If he has any hobbies we do not know of them, unless it be fishing, which is his one form of recreation. He enters into this sport with a keen ardor, and will discuss his luck with the rod when not too busy.

Mr. Hill has been charitable in an unostentatious and intelligent manner. His whole life has been an exemplification of the golden rule, and he enjoys the confidence and respect of every one he has come in contact with. Although a part of the old regime of business men, he has kept pace with the times and is alive and aggressive in his business methods and always among the first to take up new ideas. He is a firm believer in associated effort and was one of the organizers of the National Lime Manufacturers' Association and seldom misses a meeting. He is also a member of the Association of Portland Cement Manufacturers and has been identified with every public movement in Kansas City. As a large employer of labor his dealings with his employees have been such as to win the respect and affection and loyal and willing service of all who have had the honor to be connected with him. A successful business man, his successes were not gained at the expense of others, but his joy in achievement has been shared by all who knew him.

Mr. Hill represents the best type of the American business man, and when that is said all is said, for there is no better in the world.

We quote the following from the Mortel Industrie, of Berlin:

"Nach allgemeiner Einleitung über die gebräuchlichen Ofensysteme werden die bei der Anlage zu beachtenden Ausführungsweisen der Paulson, Ofengebäude und Schornsteine eingehend beschrieben. Das Werk, das in seiner ersten Auflage bereits 1881 von dem Architekten A. Ackhart herausgegeben wurde, ist für jeden Interessenten zur Anschaffung empfehlenswert, der sich mit der Swett von Ofen befassen will."

We have investigated this and find that the story is greatly exaggerated. Both Bert Swett and Fred Paulson deny that they were present when the man threw the brick and neither one saw anything of the kind at Cedar Point. Besides, they did not mingle in society there and deny making love to any girl.

The Department of Agriculture is strongly advocating the use of concrete on the farm. This is not only because of the "conservation" propaganda, but because the department believes thoroughly in using cement and concrete in place of wood. Much attention has been given to the subject by the department, which has just issued a booklet about concrete entitled Farmers' Bulletin No. 461.





WM. B. BARR, WM. WOLFF SMITH, E. H. PULLMAN  
Contributing Editors  
722-723 Southern Building, Washington, D. C.

#### OUR WASHINGTON BUREAU.

The National Government is in such close contact with every line of business that a reliable source of information located at the Capital is everywhere regarded as invaluable. ROCK PRODUCTS maintains at Washington a fully equipped and highly efficient news and information bureau located in the heart of the business and financial district and convenient to the government departments. Our patrons who may wish to be privately informed will find our Washington Bureau prepared to serve them promptly and efficiently by mail or wire. Charges are consistent with the character of the service.

The field covered includes: Congress, the U. S. Supreme Court, Court of Commerce and other courts; the Interstate Commerce Commission and other commissions, and all Government Departments with their various bureaus and branches.

Our patrons are invited to make our bureau their headquarters while in Washington and avail themselves of our facilities. Inquiries may be addressed to ROCK PRODUCTS, or to its Washington Bureau, Rooms 722-723 Southern Building, Washington, D. C.

The following inventions were patented on October 10th:

Monolithic building construction, by F. F. Sinks.  
Cement lined pipe and fitting, by G. W. Priest.  
Concrete block making machine, by C. H. Burgess and J. Curtis.

Concrete form, by L. W. McCallum.  
Concrete mixer, by H. Pocock.  
Concrete railway tie, by L. N. Buell and J. E. Wheeler.

Crushing machine, by E. B. Simons.  
The following inventions were patented on October 3rd by the U. S. Patent Office:

Composition for coating molds for concrete, by W. W. Bennett and C. S. Pilkington.  
Concrete mixer, by O. T. Overturf.  
Concrete mixer, C. H. Foley.  
Concrete piling for bulkheads, H. H. Tuthill.  
Sectional concrete pipe and formula for making same, A. M. Hirsh.

Concrete railway tie, L. C. Mooney.  
Machine for making concrete shingles and the like, T. G. Brawley.  
Concrete tunnel molding apparatus, C. H. Witt-hoeft.

Concrete wall molding device, R. W. Fuller.  
Brickhandling method and pallet, W. H. Francis.  
Brick making machine marker, G. W. Rathfon.  
Channel cementing machine, C. B. Stanton.

The Bureau of Manufactures is in receipt of a request from a business house in a South American city that it be put in touch with American manufacturers of brick making machinery. Especially firms making machinery for small plants. Cata-

#### OFF THE HANDLE.

Mr. Leasor, a salesman for Lally & Co., of San Francisco, has a number of customers on his staff who are insistent on prompt delivery. Some of these customers have names that sound like a buzz saw with three teeth knocked out and they are more than frank and open in their comments in their letters to the salesman. Here is a letter he recently received which he says is word for word as he got it:

"San Leandro, 6 June—Mister Leasor, Leli House, San Fransi seo. Dere Frend.—i got the valve which i by from you alrite but why for gods sake doan you send no handle. I loose to me my customershare ting (sure thing) You doan treet me rite is my money not so good as the other fellow: i wate ten daze and my customer he holler for water like hell by the valve. You no he is hot summer now and win he no blow the wheel, the valve she got no handle so wat the hell i goan do. You doan sen me the handle pretty quick I sen her back and I goan order some valve from Krain Compane.

"Good Bie/your friend  
"Antonio Sealminio Dutra.

logues in Spanish are preferred, and if possible they should be illustrated. Prices should be quoted f. o. b. New York and time for delivery, terms of payment, etc. Copy of letter will be sent to firms interested on request.

Up to June 30, 1911, the Reclamation Service had used in its work 1,245,827 barrels of Portland cement.

It is estimated that the three large structures now under way will require the following amounts of cement:

Arrowrock dam, Boise project, Idaho, 300,000 barrels.

Lahontan dam, Truckee-Carson project, Nevada, 70,000 barrels.

Rio Grande project, New Mexico-Texas, 275,000 barrels.

Any other cement used in the near future will be placed mainly in tunnel and ditch lining, and small canal structures.

The Strawberry Valley irrigation project in Utah presented a busy scene during the month of September, a force of 550 men and 125 teams being employed on the several divisions. In spite of the heavy flow of water encountered at the face of the big four-mile tunnel which will pierce the Wasatch mountains, 293 lineal feet were excavated. The work of concrete lining the tunnel advanced rapidly, 1,035 feet of the arch and sides and 653 feet of the bottom being placed.

A large force was employed on the Strawberry dam and 10,795 yards of material were placed in this structure which is to divert the waters of Strawberry river, which now empty into the Gulf of Mexico, into the basin of Great Salt Lake, to irrigate 60,000 acres of the most fertile land in Utah.

The construction of the Lahontan dam in connection with the Truckee-Carson irrigation project in Nevada is proceeding rapidly. A force of 200 men and 88 teams are now employed. The two steam shovels moved 25,000 yards of material in excavating the spillways. It is expected that the first unit of power will be available for use from the new power plant in November.

On the project lands the season's crops are now being harvested and reports are very satisfactory. Business conditions are favorable, prices are good and there is considerable activity in real estate.

The water drawn from Lake Tahoe for the entire season only amounted to 3,700 acre feet, or about three-eighths of an inch in depth on the lake.

The new system of rotation of water to the settlers was put in operation in September and resulted in a marked saving in the use of water and a decrease in the rise of seepage. This system will be used on the project during the season of 1912.

The Patent Office has issued a patent to J. A. Ross on a cement block machine newly invented.

"Since i write these letter i fine the g—dam handle in the bocks.exense me"

Paul A. Jandernal, who is one of the best-known salesmen in the cement business, and for many years the Lehigh Portland Cement Company's crack Ohio man, surprised his many friends last month by getting married. Miss Alene Reisinger, of Pittsburgh, was the happy bride. Mr. and Mrs. Jandernal will make their home in Cleveland. Their many friends throughout the country have showered them with congratulations and good wishes for their future.

Fred Paulson, he of the Lehigh, has deserted his Chicago pals a couple of weeks and has crossed the continental divide to visit the company's new plant at Spokane, where they get as much for cement as they do for sugar. During Fred's absence Bert Swett is sitting in the seat of the scornful.

The Santa Cruz Portland Company's plant broke all records for output during the month of August, its total production being 200,000 barrels.

## MOTOR TRUCKS

Experiments of Builders' Supply Men in the Use of This Method of Hauling, Showing the Economy of the Horseless Vehicle.

It is interesting to note the increasing enthusiasm among building material men in favor of motor trucks and new members are added to the ranks each day. It shows that the aggressive builders' supply men are studying the question and are coming to realize the economy and saving possible by this method of hauling.

The best evidence in the world along this line, of course, is what the users of motor trucks have to say about them. It is from these men that the dealer who is thinking of buying a motor truck must look for the facts.

The economy in using motor trucks was recently demonstrated by an actual test by the Unit Brick and Tile Co. of Louisville, Ky., a photograph of the motor truck used being here shown. The truck is a Longest truck, made by Longest Bros. Co. of Louisville, Ky. The figures here shown were furnished by D. P. Vanarsdall, secretary-treasurer of the Unit Brick and Tile Co., and are very overwhelmingly convincing, showing that the motor truck has reached the point where it is economical for heavy hauling. Following is his letter:

"Louisville, Ky., Oct. 5, 1911.—Messrs Longest Bros., 725 Third Ave., City. Gentlemen: As per your request of the Fourth inst we are pleased to give you a brief comparison of the results obtained with your motor truck as compared with our former method, viz, horses and wagons.

"By referring to our records we recall a job about three miles from our plant. We began delivering the brick with teams several days before we had an opportunity to try out the truck with the result that the very best day's work one two-horse team could do was to deliver 1,100 Unit brick per day. With your motor truck we delivered 5,700 a day and the work was much more satisfactory.

"It might be well for us to explain, however, that the 12-inch Unit brick was used on this particular job, and in wall construction one of them displaces three ordinary brick.

"While this is a fair comparison in favor of the motor truck we know that in longer hauls a much better record can be made.

"In all, we are more than pleased with the service obtained with the truck, and are pleased to recommend it for results and economy to any one for much heavy hauling.

"D. P. Vanarsdall."

You will note that the motor truck in this case has more than done the work of ten horses, five drivers and five wagons. In addition to the economy of using this truck, Mr. Vanarsdall states that the convenience attached to having it is so great that its real value can hardly be estimated. The conveniences are many, one is that the load can be rushed out to a job in a hurry when the workmen are out of material and did not happen to take proper precaution to keep a supply ahead; another advantage is that when the demand for brick is small, the expense for hauling is correspondingly small, as the motor truck can be laid up without any expense while standing. Another great advantage is that during the winter weather, especially when the ground is covered with ice or sleet, when the horses cannot stand up, the motor truck is scarcely affected at all in its work. This condition does not only exist during the winter, but also on asphalt streets with high crowns on them, on which after being sprinkled, no teams can work without being freshly shod, and they are in danger of serious and often fatal accidents. Much convenience and also economy has been accomplished in making loads to suburban towns located within a radius of twenty-five miles of Louisville. The railroads, for short hauls, charge excessive rates. It is almost always necessary to haul at both ends of the line, necessitating the handling of the brick so often that the cost of labor is also large, which cost can all be avoided by hauling with a motor truck.

The motor truck has undoubtedly come to stay. It is as important a factor to the manufacturer for hauling as our electric street railways are to our large cities.

In addition to the Longest truck referred to above, ROCK PRODUCTS has received accounts from dealers who use other makes of motor trucks.

The Tacoma Trading Company of Tacoma, Wash., has a Packard truck. G. C. Barlow, secretary of the company, has this to say about the use of it in hauling sand and gravel:

"We are using it almost exclusively in hauling

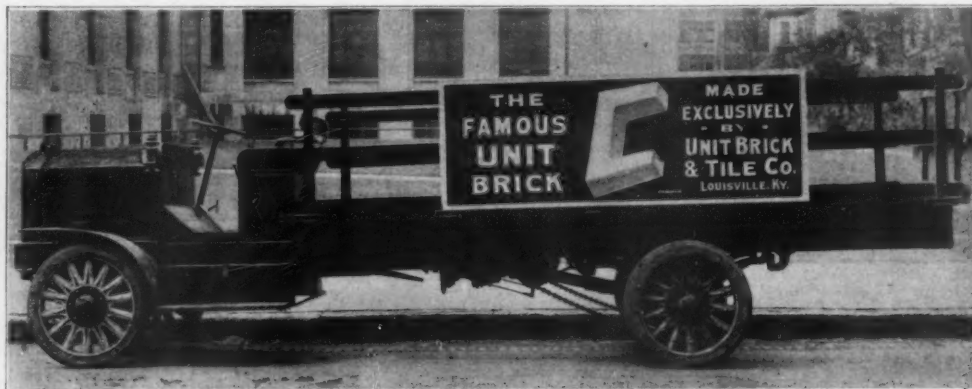
sand and gravel. We have the truck equipped with a dump body and the material is loaded into the truck by gravity and dumped at the place of delivery, neither operation taking to exceed five minutes.

"We are located at sea-level and everything we haul goes up hill, the grades in some cases being as high as nine and ten per cent. We find that on trips where it will take a thirty hundred pound team one half day to haul two yards, we can make the same trip with the truck in an hour, hauling two and one-half yards of gravel and three yards of sand. In other words, on half day, trips for teams the truck will displace five teams. The shorter the distance, the less the advantage to be gained, but on this class of material which may be loaded and unloaded so quickly, the truck will, even on the very shortest hauls, do about three times as much as a team, as our short hauls are always up a pretty heavy grade.

"The expense, of course, varies according to the mileage, but we think that it would not be less than \$10.00 per day nor more than \$12.00. There is another big advantage that a truck has over teams and that is the ability to work twenty-four hours a day, if necessary, when you are crowded to the limit and you cannot get the orders out. We frequently made use of this in delivery material out in the suburbs, ten or twelve miles away, after supper when our regular customers have quit work."

The Cleveland Builders' Supply Company has a Peerless five-ton truck with a special body. It is used for transferring lime, cement and various other building materials to various distributing depots, as well as for making deliveries.

To meet the requirements of the service, a special platform body was designed and built. It is



MOTOR TRUCK MANUFACTURED BY LONGEST BROTHERS COMPANY, LOUISVILLE, KY., IN USE BY THE UNIT BRICK & TILE COMPANY.

mounted on a long chassis frame. The sides are flush. All stakes are located inside of the angle line, which forms the extreme outside of the body. There is a piece of wood cut to an angle, extending entirely around the body platform. This forms a guard, protecting the bags of cement, or other materials, from mud, and also holding them secure against slipping when the body is used without stakes.

The absence of projections beyond the tire iron permits the vehicle to be driven close up to freight cars or buildings without danger of injuring the truck or building. Since the body is wider than the wheels the driver has only to gauge his clearance by the body line.

This vehicle demonstrates very clearly how effectively truck bodies may be adapted to meet the demands of a business requiring the transportation of heavy loads varying in shape and character.

#### OKLAHOMA CEMENT SHOW.

As usual the annual exhibition of the Oklahoma Cement Users Association at the Oklahoma State Fair was a howling success. It was held the last week in September and was the chief attraction of the fair. Cement users from all parts of the Southwest were present and much interest was shown. The exhibits were unusually fine and valuable as educational features. The Oklahoma cement men realize the necessity of making these shows of value, especially to the non-user, as when he becomes interested it means a growth in the use of cement and the sale of more machinery.

Ample opportunity was afforded to study modern methods and devices of all kinds for the use of cement in its many forms and representatives were present from many of the large houses to explain to visitors the intricacies of machinery and the methods displayed.

#### "AL" GALLAGHER'S YACHT BURNS.

Czarina Is Destroyed While Returning from a Cruise to Lake St. Clair and All Hands are Safe.

The beautiful cruising yacht Czarina, owned by A. H. Gallagher, sank in Lake St. Clair Sunday,



THE CZARINA.

October 15, after the lead pipes leading to the fuel tanks had released 25 gallons of gasoline that blazed up with spectacular fury, illuminating the lake for miles.

#### ALABAMA GOOD ROADS ASSOCIATION

Heflin, Ala., Oct. 15.—State Highway Engineer W. S. Keller has received notice advising him that the United States Office of Public Roads will let the Alabama Good Roads Association have a number of models to display at the annual convention of this organization to be held in Selma, October 25, 26, 27. Mr. Keller hopes to induce the United States government to allow him to keep these models permanently for Alabama.

There is quite a lot of interest being shown from each of the sixty-seven counties of Alabama in the coming good roads convention.

From the present outlook this will be the most interesting convention held by this association and large delegations are expected from all parts of the state. The program promises to be of deep and broad interest. One main feature of the program will be a question box, which will allow each delegate to ask questions relating to problems of road building in his individual locality. Such questions will be answered by road experts. Among the questions which will be discussed and much new light revealed to interesting parties are location, drainage, grade, surface material, dust preventives, tar and asphalt macadam, the use of convict labor in public road construction, state aid to counties, use of wide tires. Some of the most distinguished good roads advocates in Alabama and the United States will be in attendance and take part in the proceedings.

#### THE OLD RELIABLE.

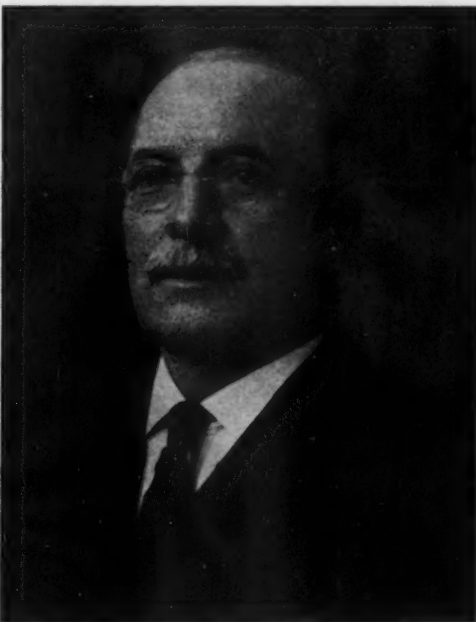
H. C. England, of St. Francisville, Ill., is one of the old "stand-bys" on the cement brick proposition. He has a Helm press and produces a very fine article. He is doing all he can in an intelligent way to promote the use of cement brick in his locality. In renewing his subscription he says: "Send me the 'old reliable' another year."

#### MARSH COMPANY GETS NEW MAN.

The Marsh Company have made a contract with W. B. Huskey, for the past five years Cleveland manager for the Allis-Chalmers Company, as their representative in Ohio, Western Pennsylvania and Indiana, for a term of five years.

Mr. Huskey is considered one of the best informed men in the crusher trade, and has a large following all over the country. He started with the Gates Iron Works years ago, and is thoroughly equipped to represent the Marsh Company in the handling of the Traylor crushers in this territory.

The Traylor crusher is one of the latest and it is claimed by its makers to be the most improved and up-to-date gyratory crusher made, and we



W. B. HUSKEY.

look for a large and prosperous season for the Marsh Company in Mr. Huskey's territory. He will be up to the standard of his name.

The Thornton Stone Company has been incorporated at Chicago for the purpose of mining and quarrying stone. Capital stock \$100,000. Incorporators, A. Volnay Foster, D. Senf, Ralph E. Hyatt.

The Canada Cement Co., Limited, is sending out circulars, effective November 1, reducing prices all over Canada 10 cents a barrel.



# DEEP WATERWAY CONVENTION

Sixth Annual Convention of the Lakes to the Gulf Association Most Enthusiastic Ever Held and Immediate Action Is Advocated.

The sixth annual convention of the Lakes to the Gulf Deep Waterway Association was held at the Auditorium in Chicago October 11 to 14, and it ended with the slogans unchanged, "Fourteen Feet Through the Valley" and "A Deep Waterway Soon."

The attendance was large throughout the sessions and the enthusiasm of business interests of all classes was more pronounced than at any convention previously held.

Through the history of the organization the need of a route deep enough to allow the passage of large ocean going vessels has been held to the fore. The prepared charts have shown the possibilities from all foreign ports moored at the Chicago wharves. They have shown American battleships steaming into Lake Michigan and in spite of the adverse reports of the government engineers the convention was enthusiastic for just such a canal. This part of the 1910 resolutions is unmodified except for greater emphasis. The additional demand of the 1911 conference is for more speedy action and an assurance of an early accomplishment.

One of the leaders in the conference declares some definite work should be under way within a year. Others, more conservative, fear some delay may be caused in Illinois, the vital part of the construction, and do not see anything in so short a time. W. K. Kavanaugh of St. Louis, president of the association, presided at the convention.

Lawrence E. McGann, commissioner of public works of the city of Chicago, delivered the address of welcome in place of Mayor Carter H. Harrison, whose physician had warned him to stay away because of a throat difficulty. Mr. McGann declared that, like all great movements, this convention might show some difference of opinion, but it was no evidence of discord. "It is but an assurance that a movement which will excite the deepest interest and thought of men is sure of ultimate success."

The governor of the state, Charles S. Deneen, is confined to his home in Springfield with a broken leg. In his stead appeared Robert R. McCormick, of Chicago, former president of the sanitary district board. He said he regretted the absence of the governor, who had given so much character and so much help to this movement. "While we may have wished for greater progress," he said, "we are not going backward or remaining stationary. The governor a year ago in addressing this convention said that he hoped to be able to come before this year's convention and tell you that Illinois had passed a deep waterway bill. Illinois has not done that, I regret to say; but Illinois has done much."

"We have found here in Chicago that the dwindling of our lake commerce is due to inadequate harbor facilities. We have come to the conclusion that we have got to develop a public harbor and we have got to advocate the public ownership of dock facilities. Chicago will be the mouth of the waterway, and the waterway will need a landing place."

At this point Mr. McCormick was interrupted by the tumultuous music of a brass band which entered the convention, followed by a large number of delegates. The visitors bore banners inscribed "Joliet Boosting the Deep Waterway" and "A Live City Boosting a Live Cause."

When things had quieted down Mr. McCormick delivered his peroration, in which he declared that men must merge their individual opinions and pull for the same general plan, and that plan must be promoted by men above the breath of suspicion. The movement must include not only the construction of waterways but the drainage of overflowed lands.

## President's Address.

The regular band, stationed in the orchestra pit, then played "Illinois" amid applause. The real outburst of the morning session, however, came when President Kavanaugh was introduced. The band played and the audience clapped its hands to the blistering point. Mr. Kavanaugh said in his address:

"During its first year this association awakened thinking citizens to the realization that river regulation is rate regulation; another early slogan was, 'Fourteen feet through the valley and dig 'er deep through Dixie'; a year ago we began to understand that river regulation is price regulation; now we question whether a 14-foot channel is deep enough—for we realize, and are bound to make the country realize, that the bigger the boat, the lower the rate."

We citizens and business men of this great and

growing interior, and we alone can determine our commercial needs."

We are no longer to be put off with puerile argument and the old foggy idea that a little waterway will be big enough for us. We are the most intelligent and powerful people of any valley in the world, some 60,000,000 strong; we know what we need; we borrow no standards from little rivers, narrow valleys and effete countries.

The end of our achievement is not yet, and will not be, until we have an open channel extending from this metropolis on the unsalted sea of our interior to the briny depths of the gulf, a channel deep enough to carry teeming products of soil and woodland and mine in peace, and effectively vessels of war in the unhappy event of national emergency.

Consider a single advance: Five years ago there was not in the United States a single comprehensive student of transportation; not one whose knowledge of facts and breadth of view covered the transportation interests and relations of the entire country.

We now, in this association and others, discuss transportation as a whole; and we are amazed at the bigness of the subject.

We find that we pay annually some three billion dollars for transportation, and three-quarters of that is represented by freightage.

We have proved the unfairness of figures cited against us by our own representatives; it is true that our ten-mile rate is less than half that of Germany, but it is also true that our primary commodities move on an average seven or eight times further than those of Germany, so that the final cost of transportation is two or three times greater to us than to Germany.

We have been deluded in the past with our low ton-mile rate, which is low largely because of our magnificent distances, for it is not so much the actual movement of cars under way as the delay and handling at terminals that makes up the expense of freightage.

## Session of Thursday.

There was a lively ten minutes when Rudolph M. Patterson, of Chicago, assisted by others in his vicinity, attempted to grill Isham Randolph, chairman of the internal improvement commission of Illinois. Mr. Randolph had just declared himself by saying, "If we can have a 14-foot waterway we want to begin work. If we can not get a 14-foot waterway and can get a 9-foot waterway, let's get to work on that." The applause had scarcely died away when Mr. Patterson arose, and "as a delegate to this convention and a citizen of the city of Chicago and the state of Illinois," entered into a colloquy with Mr. Randolph. He asked how much had been spent for water power by his commission and was informed \$4,000,000. He asked Mr. Randolph if this was provided in the original plan. Mr. Randolph said "No." "Then why," asked Mr. Patterson, "have you spent \$4,000,000 for water power instead of water way?"

When Mr. Patterson began saying things about Mr. Randolph being on the payroll President Kavanaugh interposed. He said: "There is the greatest danger in injecting some local or political dispute into proceedings of this convention. As far as I am concerned, I am an absolute stand-patter for a 14-foot waterway from the lakes to the gulf. That is what I am here for, to talk about that project. That is what we are all here for."

"Am I to understand from the president," asked a delegate, "that delegates will not be entitled to the privilege of the floor?" "They will," replied President Kavanaugh, "but they're asked, when they get the floor, to use it for no other purpose than the purpose of this convention."

The oratorical features of the afternoon was the address of Governor Herbert S. Hadley, of Missouri. The governor said in substance:

The difference of opinion that I have noted as to the acts of the chief executive of Illinois do not in any way keep the governor of Missouri from feeling at home.

The cost of transportation enters into the success or failure of every enterprise. Into the success or failure of every human life. The necessity of waterways has been demonstrated by the poor success attending the American people's attempts to regulate rates and service by other means of transportation. While they are better, it is plain to any student of transportation that rates are not impartial.

The rate from the Atlantic coast to the Mississippi river, a distance of 1,000 miles, on first class freight is 87 cents. The rate on first class freight from the Mississippi to the Missouri, a quarter of the distance, is 65 cents. It costs as much to ship freight from New York to Denver, 2,000 miles, as to San Francisco, 3,000 miles. You can ship freight from New York to San Francisco and back to Salt Lake City as cheaply as you can ship it to Salt Lake City direct. Kansas City can ship soap to San Francisco for \$1.25 and to the Fiji Islands for \$1. This actual difference in rates is due to potential water competition—a greater power than national or state regulation.

## The Long and Short Haul.

We have low rates for long shipments and high rates for short shipments. The charge per ton per mile within a State is double the rate from that State to another or across that State. The larger charge falls on those least able to pay, the lowest charge on those most able to resist.

Now, as to what way to improve: When you want to

pave a street you have got to pave some street first. When you want to improve your roads you have got to improve one road first and thereby make the improvement of all roads a necessity. That is why I say I am in favor of the improvement of the waterway from Chicago to the gulf.

Water transportation is not only rate regulation, it is land reclamation. There are 20,000,000 acres of swamp lands in the Missouri and Mississippi valleys. We have put the waterways in the hands of the general government, but the government has failed to keep their waters within their banks where they belong. If the government spends millions of dollars to put water on 3,500,000 acres of arid land in the West at \$40 an acre it ought to get the water off the fertile lands of the East.

The depth of the waterway is an engineering question. Even a governor can see, however, that the deeper the river the larger the boat, and the larger the boat the lower the rate. When the American people make up their minds they need a waterway, they will secure it.

The board of engineers appointed under act of congress in June, 1910, was composed of Gen. H. Bixby, chairman; Col. C. McD. Townsend, Maj. J. B. Cavanaugh, Maj. C. Keller, John Bogart, engineers, and Isham Randolph, conferee for the state of Illinois.

This board reports that the state's provisions for navigation, regarding both the waterway itself and the size of the locks are extravagant. The twenty-four foot waterway over part of the route is called beyond consideration and declares a nine-foot deep entirely sufficient. The report says in part:

A twenty-four foot waterway has never been considered. The cost would be enormous, and even if constructed the canal would never be used for the vessels for which designed. Both lake and ocean vessels are designed for use in water of great depth and unlimited width which they navigate with unrestricted speed and comparative safety, but on rivers, canals, or other contracted waters they must materially reduce their speed and sometimes require assistance of tugs.

In the report of the committee on the canals of New York state, 1899, it is shown that the first cost of lake vessels is so great and their speed on canals so slow that interest charges alone will prevent them from competing with barge navigation. Ocean, lake and river boats have been especially designed for the work they have to perform, and when diverted therefrom lose in economy.

Growing attention is being paid by the "by-products" of the waterway, so much that one of the delegates questioned "whether the waterway might not be considered a by-product of the new venture."

## Vast Overflow Area.

In the valley from Chicago to the gulf are 32,000 square miles, more than 20,000,000 acres, subject to overflow. About 5,000 square miles, more than the area of Porto Rico, in the state of Illinois require only drainage and protection. And to the south are the 20,000,000 acres.

In the best days of Egypt, in the days of the Pharaohs, there were never cultivated more than 5,000,000 acres of land and under a climate quite as favorable is just such soil—four Egypta possible from Cairo to the gulf, now scantily developed.

Historians say that at her height Egypt supported 10,000,000 people. By this the undeveloped area may support 40,000,000.

The reclamation of similar lands along the gulf from Mobile to Galveston for 100 miles to the interior, say the engineers, will add as much more new territory.

But they add, the 20,000,000 acres along the river alone, once reclaimed, will be equal in value to the adjoining farm lands—around \$200 an acre. This means something like \$4,000,000,000 in real estate plucked from the river. The water power, the sanitary redemption, the town sites—the value of all these should bring the whole to five billions.

And this is the "by-product" of the waterway!

And on a different and more startling basis the census figures the worth of each man in this country as a source of wealth at about \$1,250. Forty million men at \$1,250 a head—that means fifty billions of dollars as the potential value of the alluvial empire when it is looked on as the ultimate resource for carrying population, and on the Egyptian basis, two men per acre is not too many.

The cost of this by-product?

Roundly, the cost of improving the Mississippi as planned is around \$100,000,000, but of this scarcely a tenth is needed for the dredging, the real waterway construction. The rest is for the revetments to hold the banks in order to conserve this empire, and that, say the waterway men, is the duty of the government whether anything be done with the waterway project or not. So they claim only a comparatively small amount of the \$100,000,000 should be charged up against the navigation project.

Clark A. Burgess, for many years with the Ingersoll-Rand Company, and whose headquarters until recently has been in Chicago, will shortly leave for New York, where he will welcome his friends at the home office of the company, number 11, Broadway. Mr. Burgess during his stay in Chicago made many friends in the Windy City.





## EXPLOITING BY EXAMPLE.

Is your own office and warehouse made of cement, and have you ever thought of building reinforced concrete sheds and using cement in every practical manner around your own place?

If you have not, if you are neglecting these things yourself, you are not only letting get by you some opportunities to improve your own buildings, but you are also missing some mighty good chances to exploit cement products by example. If a man were to come to you selling buggies, and, instead of driving up to your place in a buggy, should come rolling up in an automobile, you would not feel that he was taking the right means to impress you with the importance of buggies. If you thought about it it would perhaps occur to you that there was something strikingly inappropriate in a buggy salesman riding around in an automobile.

Your customers may take the same viewpoint in regard to yourself by your exploitation of cement without using it, and any way there is no better way to exploit a product of this kind than by example, by using it yourself and using it in every way practicable. Moreover, it is good to try experiments with it, so that you may develop something new now and then.

Not only should you seek to use it in the construction of your office buildings and permanent warehouses, but in so doing you should seek to bring out a variety of effects and the best results possible. Not only impress people with the importance of cement, but at the same time suggest some ideas as to various ways to use it to get different effects.

Nor is it merely a matter of the main office and warehouse. How about your walks, runways, and even the sheds? There is talk today of fireproof sheds even for lumber, and this certainly offers an excellent opportunity for exploiting cement by example. Try building some, try your hand at designing various patterns of sheds. You may not only get a good investment from it, but you may develop an idea that will suggest to some farmer in your community the advisability of putting up a barn or barn sheds in the same way, or some granaries, or something of that kind.

Think—think and experiment. See how many different kinds of ways you can conceive of to use cement around your own place, and by this means you will naturally find the best and most natural way of exploiting it among your customers.

## NOT TO FORGET US.

The building material fraternity will be pleased to know that James W. Wardrop, who recently resigned as secretary of the National Builders' Supply Association, has not completely severed his connection with the trade. It may not be general information, but during all the time Mr. Wardrop was secretary of the National Builders' Supply Association, he was in reality under a leave of absence from a prominent coal company of Pittsburgh, and this leave of absence was renewed from year to year as a matter of courtesy to the association, who wanted his services, but it is understood now, that he and the executive committee came to the conclusion that his future with the coal company might be injured if a longer absence were asked for, decided that it was for his interest to go back to the company.

His familiar face will be seen at the future conventions of the National Builders' Supply Association, especially as the company with which he is connected is a member of that body, and, although he has severed his official connection with the association, his interest in its welfare will be none the less keen and manifest at the meetings.

The Braddock Construction Company of Manhattan has been incorporated with a capital stock of \$50,000 to do construction work and deal in real estate. The incorporators are: W. B. Shelton, W. E. Winne of New York City and A. E. Gunther of New Rochelle, N. Y.

The Dunn Construction Company of Newark, N. J., has been incorporated to do a general contracting, building and real estate business, with a capital of \$125,000. The incorporators are: E. D. Dunn, J. H. Dunn, Jr., J. C. Dunn, all of Newark, New Jersey.

The Tax Lien Company of New Jersey, Plainfield, N. J., has been incorporated with a capital stock of \$25,000, to carry on a general contracting, building and real estate business. The incorporators are: W. Jeffry, G. D. Peck, L. Heulsen, all of Plainfield, N. J.

The firm of Hutchinson & Oakford of Peoria, Ill., has been incorporated with a capital stock of \$4,000 to do general construction and engineering business. The incorporators are: A. S. Oakford, R. H. Hutchinson and W. P. S. Oakford.

Frank A. Arend Company, Boston, Mass., has been incorporated for \$25,000 to deal in building materials. The incorporators are Frank A. Arned, William F. Moores and Arthur B. Reed.

The Penn Building Company of Bloomfield, Pa., has been incorporated for \$2,000.

The Washington Brick, Lime & Sewer Pipe Company has been incorporated at Spokane, Wash. The company will maintain its offices in Portland. It is capitalized at \$2,000,000.

The Architectural Art Stone Company has been incorporated at Manhattan, N. Y. to manufacture cement block and handle building materials. Capital \$10,000. Incorporators, Fred. O. M. Furoke, 0 Boerum avenue; Lester H. Franklin, 4 Highland



RALPH DINSMORE, SECRETARY N. B. S. A., WILMINGTON, DEL.

avenue, Flushing, N. J.; William H. Conley, 145 W. 45th street, New York City.

The Slate Veneer Company has been incorporated at Manhattan, New York City, to deal in slate, building materials, etc. Capital stock \$250,000. Incorporators, A. J. Carpenter, A. P. Barnard, M. Dixon, New York City.

The Rockwell Building Company have been incorporated at Cleveland, Ohio. Capital stock \$25,000. Incorporators, J. E. Morley, H. E. Sheffield, W. T. Holliday and Charles W. Buss.

The Broome Construction Company, Harrisburg, Pa., was chartered under Pennsylvania state laws October 6. Capital, \$5,000.

The New Engineering and Construction Company, Wilmington, Del., was chartered under Delaware state laws September 11. Capital, \$100,000.

The Alliance Construction Company of Newark, N. J., has been incorporated to carry on a general construction business, with a capital stock of \$25,000. The incorporators are: J. Frankel, J. Herman, W. Frankel, R. Herman, all of Newark, N. J.

The Healey Contracting Company of Jersey City, N. J., has been incorporated to do a general contracting business with a capital of \$100,000. The incorporators are: T. I. Cross, A. D. Cross and A. F. Medermott, all of Jersey City, N. J.

## RALPH DINSMORE

Becomes Secretary of the National Builders' Supply Association When James W. Wardrop Resigns—Open Letter To Members.

The following letter has been sent to all members of the National Builders' Supply Association notifying them of the resignation of James W. Wardrop and the appointment of Ralph Dinsmore to take his place.

The new secretary is a native of Wilmington, Del., and is a comparatively young man. He seems to possess plenty of energy and we believe that he will do his best to give the utmost possible service to the members of the N. B. S. A.

Previous to taking up the association work, Mr. Dinsmore was connected with the E. I. du Pont de Nemours Powder Company, in Wilmington, for about five years, in various capacities, mostly of a confidential and secretarial nature. Immediately preceding his connection with the N. B. S. A. he was employed as a secretary by T. C. du Pont, president of the du Pont Powder Company, in connection with the boulevard which he is building through the state as a gift to the people of Delaware.

## To Members of the N. B. S. A.

In announcing the resignation of Mr. Wardrop as secretary of our association, we cannot help but express our deep regret on losing the services of a man who has so energetically and wisely worked in behalf of our organization. He felt the necessity, however, of taking hold of larger opportunities which had presented themselves and we wish him every success in his new undertaking.

Your committee believes it wise, in view of this action, to conduct the work of the association on a less extended scale until the time of our next annual convention; and to this end has recommended the concentration of management to be secured by maintaining the new secretary's office adjacent to that of the president, in Wilmington, Del.

Ralph Dinsmore has been appointed secretary to serve the balance of the association year and until the next annual convention.

Your committee also feels that it is important, for the time being, to discontinue the publication of "News & Views," the official organ of our association, which has heretofore been compiled and edited by Mr. Wardrop. The preparation of articles and editorials for this publication requires a very broad comprehension of the problems and relations of our active and honorary members. The fair and square handling of these problems necessary in continuing such a publication as "News & Views" are best left for fuller action on the part of the next annual convention.

The association will continue all other lines of effort to the best of its ability and requests your fullest co-operation; and asks that you do not hesitate to write fully regarding any problems met with in your business. We are receiving suggestions, complaints, etc., from our members and it sometimes happens that a man a thousand miles away has met the same problem that you are now meeting and has worked it out in a manner which probably has not occurred to you.

The association is like a row of good books—of high potential value, but of little actual use to those who make no effort to avail themselves of the contents.

It is our aim and our earnest desire to be of the utmost possible use to our members and to this end we bespeak your co-operation; suggestions will be welcomed and any questions will have our prompt and careful attention.

Your committee asks a continuance of your support to our new secretary, Ralph Dinsmore. All communications requiring association attention should be addressed to Wilmington, Del.

Respectfully,  
NATIONAL EXECUTIVE COMMITTEE,  
Chas. Warner, President.

The New York and New Jersey Contract Company of Jersey City, N. J., have been incorporated to do a general contracting and building business. Capital stock \$100,000. Incorporators, James Edward Miles, Easton, Pa.; John Bentley and George F. Brensing, 75 Montgomery street, Jersey City, N. J.

The Charles A. Craig Building Company has been incorporated at Elizabeth, N. J., to do a general contracting and building business. Capital \$25,000. Incorporators, Charles A. Craig, Jeremiah Hauck, 441 Linden avenue; William F. Groves, 1150 Mary street, all of Elizabeth.

The W. R. Austin Company has been incorporated at Holly Beach City, N. J., to deal in wood, coal, lumber, bricks, sand, cement, etc. Capital \$25,000. Incorporators, Elwood R. Austin, William H. Austin, Albert D. Austin, all of Mount Holly, N. J.

Askeal R. Shelton, who for several years conducted a yard at Wingate, Ind., has succeeded W. H. Hunter, resigned, as manager for the Andrews Lumber Company at Paxton, Ill.

The Sterling Construction Company of Sterling, Ill., has been incorporated with a capital stock of \$2,500 to do general contracting and construction purposes. The incorporators are: John H. Ahrens, Joseph Wright, Royce A. Kidder.

## NATIONAL BUILDERS' SUPPLY ASSOCIATION CONVENTION

To Members of the

National Builders' Supply Association.

We beg to announce that the National Executive Committee has decided that the Thirteenth Annual Convention of the National Builders' Supply Association will be held on Tuesday, January 30th, and Wednesday, January 31st, 1912, in New York City; with headquarters at the Hotel Astor, Forty-fourth and Broadway.

This date and place has been selected so as to make the N. B. S. A. meeting coincide with the Second Annual Cement Show at Madison Square Garden, New York City, which will be held during the week January 29th-February 3d, 1912.

The tremendous extent, great value and popularity of the first annual cement show in New York, coupled with the value of New York as a meeting center, and coupled additionally with the fact that the National Builders' Supply Association has not held a convention in the East for three or four years—make this selection a very commendable one.

With all of the above points in its favor, the National Builders' Supply Association should naturally expect the largest attendance in its history, and all wide-awake dealers in the United States should aim to spend this week in New York City.

More detailed notice will follow later.

Very truly yours,

NATIONAL EXECUTIVE COMMITTEE.

By Chas. Warner, Chairman.

## NEW YORK RETAILERS.

New York, N. Y., Oct. 12.—There has been little in the way of new developments to vary the monotony of the past few months in the local retail building materials market and business during the past four weeks has been quiet and more or less routine, with dealers showing no inclination whatever to purchase stocks. As a result orders have been of the usual hand-to-mouth character, with purchases for immediate or nearby requirements only. The Portland cement trade is in a very bad shape, indeed, and the product is quoted at the lowest price in years, \$1.05 to \$1.10 per barrel, in large quantities.

To further accentuate the general quietness, several of the large money-lending institutions during the past two weeks shut down on liberal loans for building operations. They claim that New York, especially in apartment houses, hotels and office buildings, is overbuilt and that building operations of late have progressed on a too rapid basis that would tend to safe and conservative renting during the next few years. The claim is made in particular that lower New York has entirely too many office buildings, and if the word of the renting concerns that it is very difficult to fill these buildings can be taken as a safe criterion of actual conditions the loaning institutions are no doubt right. It has been a number of years since it has been so difficult to secure building loans.

Speaking in reference to this situation, Walter Stabler, controller of the Metropolitan Life Insurance Company said: "We have shut down tight in giving loans for new apartments. We have a few loans still pending for which arrangements were made some time ago, but we are taking up absolutely nothing new in that line. Should there be a partial, or, better yet, a total cessation of building-operations of the apartment house type for at least one year the situation would be materially relieved, and the money market would become much easier for obtaining mortgages and loans on projected operations."

"With very little building within the next year the natural increase of population will practically fill up the existing vacancies. But should the erection of apartment houses continue as actively as in the last few years building operators, and particularly the smaller ones, will find the situation much worse than it is today."

William C. Morton, of the Consolidated Rosendale Cement Company, speaking in reference to general conditions in the building materials market during the past month, spoke as follows:

"There has not been any improvement to speak of noted in the local building market during the past four weeks and business continues to be conducted in a hand-to-mouth way. Dealers are not receiving any orders and therefore find it unnecessary to stock up. I understand that the large loan companies have declined to advance any more money on building operations of a certain class, and this will of course tend to further check progress in building lines. The Portland cement market is dull and in a bad shape, and manufacturers are awaiting developments."

A. Wilson, of the Clinton Point Stone Company, reviewed the local crushed stone situation as follows: "The demand for crushed stone during the past month was good and we have enough business

on hand to keep us busy for the balance of the year. Last year was considered a big one among the stone trade, and we have done a bigger business this year than in 1910. The outlook is bright and we will be kept busy making deliveries for some time to come. Prices have been rather steady."

A representative of the United States Gypsum Company stated that the demand for their products was fairly active during the past month, and they look for a good run of business to continue during the balance of the fall. The prospects for good business during the balance of 1911 are bright.

## DENVER RETAILERS.

The Barrows Lime Company, located at 13th and Wynkoop streets, report a very good run of business this fall. Among the large jobs that are being furnished by them are: The Elks Home, the Hesse Hotel, the Shubert Theater building and the McMurtry Paint Company warehouses. Along with these are the usual amount of small jobs, which, taken together, are keeping all hands very busy at present. Cement, plaster and sundries are all handled, but the main commodity dispensed is lime. Under this head are found Missouri lump and hydrated limes, Colorado gray lime, and prepared lime putty. As this firm is the only one in town that sells prepared putty there is always a fair demand for same.

The L. W. Robinson Lumber Company are continually enlarging their place of business at Iowa street and the Colorado & Southern tracks. Among the last additions are a new lime shed and also a cement warehouse. Business has been very good all summer and is fairly good this fall. A very good cement trade was worked up by the company this summer when the district surrounding the yards was opened for city sidewalk work. Being in close proximity to the work and being able to rush orders at a very short notice, a brisk trade was at once established. The yard is on the South Denver division of both the Denver & Rio Grande Railway and also the Colorado & Southern. South Denver has been having a fair amount of the building this year, and as lumber is also a chief selling product the business will probably be as prosperous this fall and winter as ever.

The International Fuel & Feed Company are now enjoying a brief rest after the first season of handling cement. The company is situated on South Logan and the Colorado & Southern tracks. This is the first year that cement and plaster have been handled by the company, and being in the center of the South Denver sidewalk district the firm has at all times been kept very busy.

Among the dealers of South Denver to whom great credit is due are the Fleming Brothers. This firm started in business on the South Side very few years ago, and since then their advance has been steady. At first lumber was sold exclusively, but as a trade was established and at the same time a building boom was started Fleming Brothers started to do contracting. Small houses were first built and sold and then larger ones. As times improved so did business, until a new location was also added to the business. At this time a mill

was erected at Ohio and South Broadway and sheds and warehouses for the storage of lime, plaster and cement. After this the next large work was the erection of the First Avenue Hotel building, at First Avenue and Broadway. This is now the general office of the company, as well as being the home of the tank which was incorporated by the Fleming Brothers. They also enjoy a good portion of the banking business of South Denver. Business at the present time is very good owing to the number of large jobs being supplied.

The McPhee & McGinnity Company, probably the largest lumber company in Denver, also are dealers in plaster and cement. The Ideal brand of plaster is the largest seller, but the Buck Horn brand runs a close second. Medusa White cement is also a large seller, as this company is state agent for same. Iola and Great Western cements are both handled, and have found a good market here. In the sale of plaster this company caters largely to the larger contractors, and though in this way they do not have a very large number of plaster customers the output is generally large. In the sale of cement it is more general. Concrete foundations are very popular here and cement is figured on nearly every lumber bill. The offices and mills of the company cover an entire block and are located on the Colorado & Southern, Rock Island, and Union Pacific tracks. The establishment is located at Eighteenth and Wazee streets.

The Sayre-Newton Lumber Company, dealers in lumber, also carry plaster and cement. Sales have been found very good in both lines this year owing to the fact that a great number of the carpenters who buy their lumber from this company also buy their lath and plaster, as well as cement included in the general estimate. The company is situated at Twenty-third and Blake streets, on the Union Pacific, Rock Island, and Denver & Rio Grande Railways.

The Englewood Lumber Company, situated in the suburb of Littleton, report a very brisk business this fall. There has been extensive building in Englewood this fall, due to a boom caused by the extension of the electric road. Most of the residences are frame, but nearly all of these have cement foundations. What lime trade has been found is in store buildings, etc. This company, although very young, has established itself in the community to such an extent that a fair amount of South Denver business is also controlled.

W. A. Schuler of Dixon, Ill., will conduct the building material business in using the sheds and ground formerly occupied by the Alexander Lumber Company, which recently purchased the Emerson yards and consolidated the two.

The Robert Anderson Lumber Company of Pleasant Plains, Ill., just west of Springfield, has added to its facilities by purchasing the coal yards of Ward & Kindle Company, which will be converted into building material sheds.

John Steinberg has purchased the interests of W. F. Dillman, A. W. Worcester and Guy Lowenstein in the White Hall Lumber Co. at White Hall, Ill., and the firm now consists of R. Shaw, C. E. Stetson and John Steinberg.



## DISPLAY ROOMS.

## Advantage to the Dealer of Providing a Room Where Various Materials Can Be Shown.

Nothing helps a builders supply dealer's sale of brick so much as a display of the various styles of face and ornamental brick. It is simply the show window idea of the mercantile and the dry goods line applied to your business. The purpose of the dry goods merchant's show window is to display the attractions of his stock in such a manner that he will create a desire in the minds of people who pass the store to possess something in the window. The merchant could not do business without his show window, and it is just as important to him as his advertisement in the local paper.

If you would set apart one room in your establishment and arrange in it a brick display showing all the grades and styles that you handle, as well as your other material and specialties, you would be surprised with what quickness builders would take to it. Architects could bring their clients to your place to show them what effects could be produced with different kinds of bricks, and with such a display available the intending builder could make his selection and you would get the order.

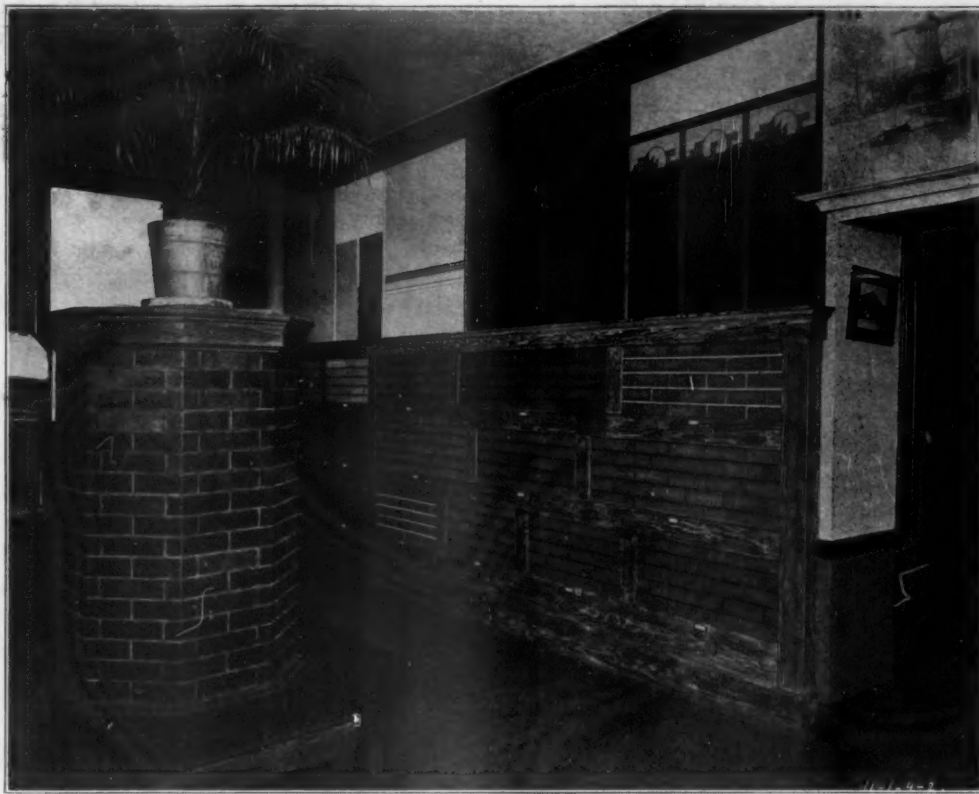
Many dealers throughout the country are making use of such display rooms like those shown here and they find that it pays well. Any of the brick and material men will be glad to give you information on this subject and advise you how to start a display room.

One of the views shown in this connection is that of the Wisconsin Lime and Cement Company. The brick display room is one of the attractive features of its suite of offices in the Chamber of Commerce Building in Chicago. The City Coal and Wood Company of New Britain, Conn., has a beautiful display room that adds much to its business.

Another display room illustrated is that of V. H. Kriegshaber & Son, of Atlanta, Ga. You will notice that in each case the brick are displayed in regular courses, so that the buyer can get an accurate idea how they will appear in the wall. He is thus able to make a selection intelligently that will suit his taste.

## WEST COAST RETAILERS.

San Francisco, Oct. 13.—Although there was in September a decided lull in the building supply business in this city, due largely to the uncertainty of the money markets preceding the municipal election, local dealers declare that orders for this month will be much larger and they predict a steadily increasing volume of business through the winter. The amount of capital represented by the building permits issued here in September was considerably less than the total for August, but exceeded the record for September, 1910, by nearly \$200,000. In Portland there was



WISCONSIN LIME &amp; CEMENT COMPANY'S DISPLAY ROOM.

also a falling off in the totals, but Los Angeles showed an advance of more than \$1,000,000 over the August figures. The records of the three cities for September were: San Francisco, \$1,634,048; Portland, \$1,436,120; Los Angeles, \$2,813,247.

The Contractors' & Dealers' Association of Sacramento has adopted a set of rules designed to afford protection against irresponsible builders who are prone to jump contracts and leave subcontractors in the lurch. The organization formed a few months ago includes contractors in all the building trades, plasterers, cement and concrete men, carpenters, etc.

Throughout California and along the rest of the Pacific coast good roads campaigns are in progress and many millions of dollars will be expended

in the construction of state highways during the next few years. The California legislature has appropriated \$18,000,000 for new roads, while a similar bill is being prepared by Governor West of Oregon which contemplates the expenditure of between \$30,000,000 and \$50,000,000.

The Hammond Engineering Company of this city will make the first delivery of rock for the Humboldt Bay jetty construction project about the first of December. The company has taken a lot of rock-handling machinery to the site from its other works.

## TWIN CITIES RETAILERS.

Minneapolis, Minn., Oct. 17.—Building conditions this fall have been unduly hampered by the prolonged rainy period. For two months, up to within a few days, there have been frequent and heavy rains. There is also some business depression over the short crops, and this has also had its full effect. Prospects for fall depend largely upon whether the weather changes for the better or if the persistent rains and bad weather keep up.

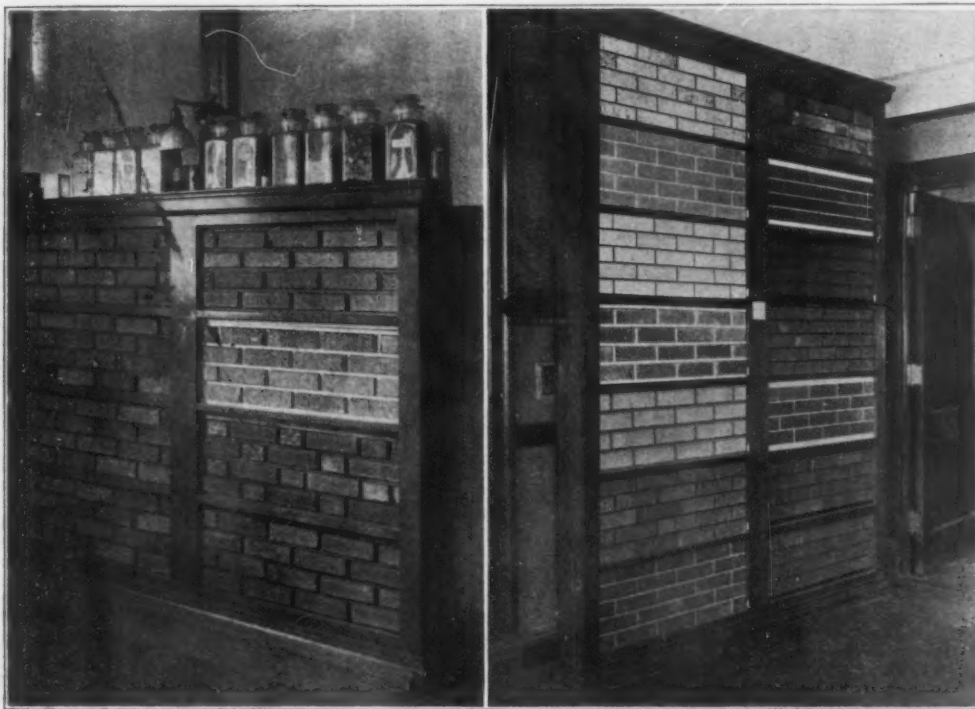
Minneapolis building permit totals for September were \$1,002,850, a very creditable showing, but a decrease from a year ago, when the same month had \$1,170,305. For nine months this year is ahead, \$11,956,705 against \$11,826,320.

St. Paul's September total was \$845,931 in new permits, against \$664,768 for the same month of a year ago.

There is considerable interest in the placing of the agencies for the new Lehigh Portland cement from the Lehigh's new plant at Mason City, Iowa. A number of prominent retailers in the Twin Cities have been figuring on it, but they have not reached the point of making an announcement on the subject.

The Northwestern Lime Co., of St. Paul, enlarged its business to include a retail department a few months ago. The company is taking on different lines of goods from time to time as they find lines that meet their approval. E. H. Bassett, who has charge of the retail department, expects to build up a strong trade on the specialties which are being taken on from time to time.

Governor A. O. Eberhart, of Minnesota, has issued a call for a meeting in St. Paul November 8 to consider matters of fire prevention. The proclamation recites the loss of money and time and of lives through fire, and points out the per capita loss of the United States of \$2.71 against only 50 cents in the highest rate of any European country. It points out that half the loss in this country is due to incendiarism or negligence and invites consideration of ways to overcome the negligence.



VIEWS IN THE DISPLAY ROOM OF V. H. KRIESHABER &amp; SON.



The committee on program for the gathering will have a number of notable speakers in attendance, and a meeting of great value is expected. But the strong feature of the gathering will be the inevitable suggestion that if fireproof materials and fireproof construction were used the hazard of fire would perforce be reduced materially, while the danger of "group fires" (those which spread from another building) would be almost nothing. Every dealer in concrete blocks, cement or clay brick, or any other fireproof material can well claim for himself that he is entitled to a place among the conservationists who would save property from destruction by fire.

The annual meeting of the directors of the Northwestern Cement Products Association was held at the Hotel Radisson, Minneapolis, October 3. The principal work of the gathering was to lay preliminary plans for the forthcoming convention. There has been a great deal of inquiry from the cement users of the Northwest as to a show and convention next winter. The suggestion which has been made by exhibitors to join in the cement show in Chicago is not well received. Many of the dealers in interior points will not go to Chicago, but they will go to the Twin Cities. The question of holding a cement show was referred to a committee of three live wires: W. C. Berry, Minneapolis; Martin T. Roche, St. Paul, and Edward H. Cobb, Minneapolis. They will canvass the exhibitors as to such a show and will report their findings and the prospects at a meeting of directors to be held at the Hotel Saint Paul, in St. Paul, November 7. They will also report possibilities as to a suitable hall.

As things now stand, the convention will be held in St. Paul, and in all probability at the Auditorium. This is a large building, with ample space for all exhibits, as well as good halls for the meetings. Minneapolis has nothing in the way of a hall to offer, although a new building is in prospect and will be erected in the spring for just such conventions.

There is a little talk of having the meeting come between the Chicago and Kansas City shows. The Chicago show ends February 28 and the Kansas City show begins March 14. By having the meeting begin March 4 or 5, and running through three or four days of the week, there would be time for exhibitors to move from Chicago and have ample time to get down to Kansas City without trouble. A number of exhibitors who have been in the Northwest before have stated that they want to come to another show, for they have found it a good business proposition.

#### SYRACUSE RETAILERS.

Syracuse, N. Y., Oct. 13.—Dealers in cities and towns in western and central New York are handling more cement and builder's supplies than last year. The farmer continues to use cement for improvements on his farm in the way of walks, foundations for barns and numberless other uses, which makes him a more important factor in the cement field every year. While there is no boom in building circles in any of the cities and towns in western and central New York, conditions in building lines are as good as they were last year and the retail builder's supplies dealers are all doing a satisfactory business. Without exception, they are all live and energetic men and when a job is in sight they reach for it, and get it.

George W. Pack & Son's office and builders' supplies yard is located at 415 and 417 E. Water street, Syracuse. Their office building is the same old "shack" used by Colonel Graham before the Civil war of 1861, who was a pioneer in the lumber trade in this part of the state. George W. Pack came here from England in 1866 and established his business in 1877. Mr. Pack is an ardent advocate of concrete construction, especially for dwelling houses, never having forgotten "Link House," at Edgerton, Kent county, on Lord Cornwallis' estate in England, where he was born and where his family has resided since the 13th century. The walls are built of stucco and when the house was erected houses, in those early years, had no chimneys. It is in perfect state of preservation. Mr. Pack started the builders' supply business in Syracuse in a very small way, which today has become one of the largest in the city. Their plaster mill is located on North State street, having a capacity of 90 tons of plaster a day. Its brand, "Adamant Plaster," is favorably known throughout New York. It is said to be the original patent plaster and was patented by a Hungarian, a Prof. Straub. This mill is three stories and basement in height, electrically driven, no

steam being used, and each apparatus in the mill has a separate motor. The mill uses two Broughton mixers, made by W. P. Dunning & Co. On the ground where the mill stands is their stable, stabling twenty-five head of horses, used for hauling material to jobs in various parts of the city. Their brick yard, just outside of the city limits, in the town of Salina, turns out two millions of brick annually.

They handle Vulcanite, Universal and Cayuga Portland cement, their own plaster, Kelly Island Lime & Transport Company's hydrate and lump lime, fire brick from Elks Fire Brick Company, of St. Mary's, Pa., and Hayes Run Fire Brick Company, Pa.; metal lath made by the Bostwick Metal Lath Company, Niles, O., and the Gary Iron & Steel Company, Cleveland, O., including a full line of masons' supplies. Charles H. Pack said, "Business has been satisfactory this year and prospects for fall look promising."

W. H. McCarthy, who for thirty years has been engaged in the real estate business and a builder on a large scale in Syracuse, commenced handling builders' supplies six years ago. His office is at 1512 S. Salina street and his yard on the opposite side of the street. His warehouse has a storage capacity of 5,000 barrels of cement, plaster, etc. He reports an increasing trade with farmers in cement. He handles Edison Portland cement, plaster of the Paragon Plaster Company, of Syracuse, lime in lump and hydrate, Akron sewer pipe, flue lining, fire brick, etc., through the Paragon Plaster Company; sand, gravel, metal lath and a full line of masons' supplies. He reports brisk business this year, and bright prospects for the fall season.

D. J. Salisbury operates one of the prominent coal and builders' supplies yards of Syracuse, at 206 St. Marks avenue. It was established 14 years ago. A switch track running into the yard from the New York Central railroad accommodates eight freight cars. His warehouse has a storage capacity of 1,000 barrels of cement. He handles Universal, Atlas and Dexter Portland cements, the latter manufactured by the Catskill Cement Company, of Eaton, Pa.; "Adamant Plaster," of Geo. W. Pack & Son, and the product of the Paragon Plaster Company, of Syracuse; Kelley Island Lime & Transport Company's hydrate and lump lime; sewer pipe, flue lining, wall coping, etc., of the Robinson Clay Products Company; metal lath of the Bostwick Metal Lath Company, of Niles, O.; common and pressed brick and mortar colors of the



G. W. PACK & SON, BUILDERS' SUPPLY WAREHOUSE, SYRACUSE, N. Y.

Paragon Plaster Company. Mr. Salisbury just finished furnishing a big job with sewer pipe; started two years ago resurfacing Solvay. Close to one hundred car loads of sewer pipe were furnished. "Business looked dull the fore part of this year," said Manager Fred T. Salisbury, "but has become very brisk now." Crockery jars for pork, sauer kraut, etc., from the Robinson Clay Products Company are also handled, which have an active demand.

The Paragon Plaster Company, of Syracuse, has passed the quarter century mark of its existence and holds the claim of being the oldest dry mortar concern in the United States. Its plaster mill is located on the Erie canal at Magnolia street. The canal runs on the north side of the property the mill stands on, switch tracks from the New York Central, R. W. & O. R. R., and West Shore railways, which accommodate twenty-four freight cars, and switch track just built from the Delaware, Lackawanna & Western railway running alongside of this property, accommodating eighteen freight cars, give the company unexcelled shipping facilities by rail and water. The mill is four stories in height, of concrete and fireproof construction, equipped with the latest type of machinery. Its sand-lime brick plant has a capacity of six millions of brick a year, or 20,000 a day. Its new factory building, 100'x100', has just been completed; it is two stories in height, reinforced concrete and fireproof construction. The capacity of the plant when ready for full operation will be equal to 10,000,000 of brick a year. This plant is



DISPLAY ROOM IN OFFICES OF THE CITY COAL AND WOOD COMPANY, NEW BRITAIN, CONN.

being equipped with new machinery. The ground occupied by the plant, including sewer pipe and sand yard, is approximately four acres. Its warehouse storage capacity is 10,000 barrels of cement and plaster. It operates fourteen teams and thirty head of horses for hauling material to jobs. The company has been the distributor of the Atlas Portland Cement Company in Syracuse since it first started in business. It handles a full line of imported and American Keene's cements, handle their own plaster, lump and hydrated lime, are agents for the products of the Consolidated Expanded Metal Companies, Pittsburgh, agents for the product of the American Steel & Wire Company, agents for the fireproof doors of the P. T. P. Process Company, Columbus, O., agents for the tapestry brick of Fisk & Co., New York city, agents for the product of the Iron Clay Faced Brick Company, Columbus, O., besides agencies for other brick; agents for the Covert dampers, made by the Covert Dampers Manufacturing Company, New York city, used largely in this section of the state; agents for Toch Bros. paints, carry an exceedingly large stock of fire brick, fire clay, flue linings, and manufacture cold water paints. W. K. Squier, manager of the Paragon Plaster Company, reported business good this year, with much activity to be expected during the fall season.

The Syracuse Wall Plaster Company has its general offices at 319 North Clinton street and yard and factory on Lodi, extending from Center to Wolf streets. The Oswego canal runs on one side of this yard and switch tracks from the New York Central accommodating twelve cars run to the factory and warehouse. Its storage capacity is 10,000 barrels of cement and plaster. It uses from six to twelve teams, varying with the seasons, for hauling its material to jobs in various parts of the city. Its plaster mill is one of the most modern in the state, it is claimed, run by electric power, and has a capacity of turning out forty tons of "Syracuse" plaster in ten hours. Sand from boats is unloaded by means of derricks operated by electric power. The company manufactures concrete blocks, two styles of cement roofing tile and white cold water paint. It handles Lehigh Portland cement, its own brand, "Syracuse," plaster, granulated lime of the New England Lime Company, Danbury, Conn.; hydrate of the Kelley Island Lime & Transport Company, sewer pipe flue lining, etc., of the New York State Pipe Company, Rochester, N. Y., and the American Sewer Pipe Company, Akron, O.; metal lath of the Bostwick Metal Lath Company, Niles, O., and the General Fire Proofing Company, Youngstown, O.; mortar colors of C. K. Williams & Co., Easton, Pa.; fire brick and fire clay of the Harbeson, Walker Refractories Company, Pittsburgh, Pa.; Sackett plaster board, of the United States Gypsum Company, and Rest Bros. Keene's cement. William F. O'Connor, president and treasurer of the company, said this year was the heaviest business they had done since the company was incorporated.

C. J. Sullivan is a manufacturer of concrete building blocks, porch columns, vases and urns. His office is at 126 S. Clinton street and his plant is located at 907 North State street, Syracuse. The daily output of his building blocks is 200 a day. He handles the product of the American Portland Cement Company, of Philadelphia, Pa., in large quantities. He is a large contractor. He built the Tallman bridge in Syracuse, which is of reinforced concrete construction; laid one and a quarter miles

of brick pavement in Burnett avenue and laid last year 150,000 feet of cement sidewalks in this city. He owns and operates sand and gravel pits on Brighton avenue. He said, "I have never had a better July and August than this year."

Edward I. Rice, Incorporated, is one of the largest dealers in coal in Syracuse, with offices in the Coal Exchange building at 121 E. Water street. The business was established twenty years ago. This concern also deals extensively in Portland cement. It is the agent for the "Dragon" cement of the Lawrence Portland Cement Company, of Philadelphia. The yards and storehouses of this firm are at both ends of the city, and have a storage capacity of 20,000 barrels of cement. These yards have switch tracks from all the roads entering the city and are located on the Erie canal. At the south end of the city Mr. Rice personally owns thirty acres of sand and gravel beds of practically unlimited production, and a factory, whose output is 700 cement blocks a day, at Dorwan Springs, Mr. Rice's home, comprising a tract of land of 200 acres, where he owns sand, gravel and water.

#### OSWEGO RETAILER.

Oswego, N. Y., Oct. 16.—J. B. Farwell & Co. with offices and yard at Front and Schuyler streets, Oswego, N. Y., established their business in 1864. They do the largest business here and carry the most complete and full line of builders' supplies. Their yard is on the banks of the Oswego river and has switch tracks running into it from the Delaware, Lackawanna & Western Railway, accommodating six freight cars, which are switched from all the railroads entering the city. Their shipping facilities by rail and water are unexcelled and the best in Oswego. Their yard occupies 300 feet square and their warehouse has a storage capacity of 5,000 barrels of cement. Five teams are employed in hauling their material to jobs. They handle Vulcanite, Atlas, Universal and Whitehall Portland cements; plaster from the Paragon Plaster Company, Syracuse and the Niagara Gypsum Company; lump lime from Adams & Duford Company, Chaumont, N. Y., and hydrate from the Woodville Lime & Cement Company, Toledo, O.; sewer pipe, fire brick, fire clay, flue lining, wall coping, etc., from the Robinson Clay Products Company, N. Y. City, and New York State Sewer Pipe Company, Rochester, N. Y., from the latter they also get brick and the Onondago Brick Company, N. Y.; also fire brick and fire clay from the Elks Fire Brick Company, St. Mary's, Pa.; patent chimney tops from the Excelsior Fire Clay Company, Excelsior, O.; Sackett's plaster board from the United States Gypsum Company; plaster of Paris from the Paragon Plaster Company, Syracuse; hydraulic cement from E. B. Alford & Co., Jamesville, N. Y.; metal lath from General Fire Proofing Company, Youngstown, O.; mortar colors and a full line of masons' supplies. Mr. Farwell stated that business this year has been normal and satisfactory, while indications for fall trade show increased activity.

M. P. Neal & Co., Oswego, have their office and lumber yard at 75 West Second street. They do a large trade in lumber, having been established since 1889. Five years ago they commenced handling, as a side line, Edison, Lehigh, Atlas and Cayuga Portland cements; the products of the United States Gypsum Company; lump and hydrate of the Kelley Island Lime & Transport Company; sewer pipe from the Paragon Plaster Co. of Syracuse, and the Onondago Vitirified Brick Company of Syracuse. The storage capacity of their warehouse is near 1,000 barrels of cement and they employ three teams in their business for hauling material. Their warehouse is located on the Delaware, Lackawanna & Western Railway. Mr. Neal reports business fairly good.

#### WATERTOWN RETAILERS.

Watertown, N. Y., Oct. 16.—Marcy, Buck & Riley are probably the largest dealers in coal and builders' supplies in this city. They started in business forty years ago. Charles E. Olley is the manager of the firm. They operate six large yards, centrally located, for the distribution of material in the city. Their main offices and builders' supply yard are located at 483 Court street; all their yards have switch tracks from the railroads entering Watertown. A year ago they took over the business of the Paragon Plaster Company in this city. Their warehouse has a storage capacity of 5,000 barrels of cement and employ five teams hauling material to jobs. They handle cements of the Alpha Portland Cement Company and the Alsen Portland Cement Works; imported LaFarge, Dyckerhoff and Keene's cements; plaster of the Paragon Plaster Company, Syracuse, N. Y.; Richville lump lime of Chas. Williams & Co., Bigelow, N. Y., and hydrate

of the Kelley Island Lime & Transport Company; are the agents for the sewer pipe, flue lining, wall coping, etc., of the American Sewer Pipe Company, Akron, O.; fire brick, fire clay of the Queen's Run Fire Brick Company, Lockhaven, Pa.; mortar colors of the Clinton Metallic Paint Company, N. Y.; metal lath of the General Fire Proofing Company, Youngstown, O.; common, pressed and tapestry brick of Fisk & Co., N. Y. City, Illumina Shale Company, Bradford, Pa., and iron clay brick of the Ohio Mining & Manufacturing Company, 96 Broad street, N. Y.; cold water and cement paints from the Paragon Plaster Company, Syracuse; concrete reinforcement from the American Steel & Wire Company, the Clinton Wire Company and the Standard Expanded Metal Company. Marcy, Buck & Riley manufacture cement bricks, own and operate a sand pit containing ten acres, twelve miles from this city and ship it within a radius of one hundred miles. "Business," said Chas. E. Olley,



MARCY, BUCK & RILEY, BUILDERS' SUPPLY WAREHOUSE, WATERTOWN, N. Y.

manager of the firm, "is fine, it is double what it has been with us in the last seven years."

S. W. Johnson, at 176 Polk street, has one of the best and central locations for a builders' supplies yard in Watertown. He has a switch track from the New York Central Railroad running through the center of his yard, with warehouses on both sides of the track. The storage capacity is approximately 1,500 barrels of cement. He handles Lehigh Portland cement and Medura white Portland cement; is agent for the plaster and Sackett plaster barrel of the United States Gypsum Company; hydrate of the Kelley Island Lime & Transport Company, and lump lime from Chas. Williams & Co., Richville, N. Y.; sewer pipe, flue lining, wall coping, etc., of the Robinson Clay Products Company, N. Y. City; fire brick, fire clay, of the Keystone Brick Company of Pittsburgh, Pa.; mortar colors of A. Wilhelm & Co., Reading, Pa.; common brick of the Cary Brick Company, Mechanicsville, N. Y.; pressed brick of the Burke Brick Company, Rochester, N. Y.; roofing of the National Roofing Company, North Tonawanda, N. Y., and a complete line of masons' supplies. Mr. Johnson reported business very good this year, much better than in 1910.

The Burdick Coal Company was established eighteen years ago in Watertown, and incorporated in 1909. It commenced handling builders' supplies three years ago. Its yard is located at the corner of Court and River streets with switch track run-



OFFICE AND YARD OF J. B. FARWELL AND COMPANY, OSWEGO, N. Y.

ning into it from the New York Central Railroad. The storage capacity of its warehouse is 3,000 barrels of cement. It is the agent here for the cement of the Universal Portland Cement Company; it handles the plaster of the Empire Gypsum Company of Rochester; Richville, N. Y., lump lime of Chas. Williams & Co.; hydrate and mortar colors of the Syracuse Wall Plaster Company, N. Y.; metal lath of the Northwestern Expanded Metal Company of Chicago; plaster and plaster board of M. A. Rub of Buffalo, N. Y.; fire clay, fire brick, of the Robinson Clay Products Company, and pressed

brick of the Bradford Pressed Brick Company, Bradford, Pa. Business was reported by J. W. Cary, vice-president, treasurer and manager of the company, better than last year. A. M. Burdick is president and C. D. Riggs secretary of the company.

#### PALMYRA RETAILERS.

Palmyra, N. Y., Oct. 14.—E. B. Anderson, manager of the Sexton warehouse and coal yards, founded this business in Palmyra 32 years ago. Previous to this time he had been in Chicago for ten years, part of the time in the Chief Grain Inspector's office of the Board of Trade there. Its warehouse is on the New York Central, the West Shore Railroad and the Erie Canal. The storage capacity of the warehouse is 500 barrels of cement plaster and lime. It uses three teams in hauling material to jobs. At the present time it handles Lehigh Portland Cement; plaster of the Rochester Pulp Plaster Company, and hydrated lime of the Woodville Lime & Cement Company of Toledo, buying it of J. J. Mandary of Rochester. It put up the first coal pockets in this territory, and is an important factor here in the coal trade. Mr. Anderson reports a big sale of cement to the farming districts around Palmyra, and that business has been brisk and prospects promising for the fall season.

C. A. Sessions & Son established their coal and builder's supplies business in Palmyra, N. Y., in 1891. Their principal trade is in coal. They operate 3 yards in this city in close proximity to each other which are on the New York Central R. R., the West Shore railroad and the Erie Canal. The combined storage capacity of their warehouses is 1500 barrels of cement. They own and operate at the head of Canal street a sand and gravel pit, which produces much of this material used in and near Palmyra. It owns five horses, two teams and a single for hauling material and handles Universal and Edison Portland Cements; United States Gypsum Company's "Ivory Wood Fibre Plaster" and "Ivory" brand of hydrated lime, and sewer pipe of the United Clay Company and Robinson Clay Products Company, both in New York City. R. D. Sessions reports an increasing sale of cement to farmers this year; building not quite as active as last year; business fair with a good outlook for this fall.

#### NEWARK RETAILERS.

Newark, N. Y., Oct. 17.—Strange as it may seem there is not a single builders' supplies yard in Newark and it seems to be the opinion here that there is a rich opportunity for a live man to start one handling a full line of builders' supplies, and there is some talk that this will be done shortly in connection with a coal yard. Two hardware stores and a lumber firm carry cements and part of masons' supplies as side lines. It is said that contractors buy direct in large quantities material for their own use daily.

The Mattison Hardware Company in Newark has its hardware store at 15 S. Main street. It was established 22 years ago and commenced handling cement ten years ago. It handles now Lehigh Portland Cement, plaster of the Empire Plaster Company and the Niagara Gypsum Company of Buffalo; hydrated lime of the Woodville Lime & Cement Company of Toledo; sewer pipe of the New York State Sewer Pipe Company and the Robinson Clay Products Company and Sackett Plaster Board from the U. S. Gypsum Company and the products of the Empire Gypsum Company of Rochester. Mr. Mattison reports local business good, demand for cement from farmers increasing and outlook for fall bright.

The A. C. Bartle Lumber Company at 4810 Union street, Newark, N. Y., was founded by A. C. Bartle's father, James P. Bartle, in 1853. Its warehouse has a storage capacity of 500 barrels of cement. The firm commenced handling cement three years ago and is today selling the products of the Lawrence Portland Cement Company and the Penn-Allen Portland Cement Company, also Sackett's Plaster Board from the United States Gypsum Company. W. E. LaPointe, the secretary and treasurer of the company, is one of the brightest young business women in Central New York. A. Christy, who has been with the company for twenty-six years, is its sales manager. Peter Kemper, Jr., president of the company, was drowned last August, falling overboard while sailing on the pleasure yacht "Rebel" on Lake Ontario. His body has not been recovered at the present time. His untimely death cast a gloom over this community where he was very popular. The business of the A. C. Bartle Lumber Company will continue to be conducted as in the past.

[Continued on Page 54]



# CEMENT

## Association of American Portland Cement Manufacturers

Meets Semi-Annually.

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### Executive Committee

## CEMENT COMPANY.

Recently Formed and Now Selling Its Stock to Retailers,  
Makes the Claim that They Will Be Able to Under-  
sell the Market Ten Cents a Barrel.

Quite a number of dealers in Michigan, Ohio, Indiana, Illinois and Wisconsin have been visited recently by solicitors representing the Empire Portland Cement Company. The offer is made to the dealer that if he will subscribe for \$1,000 in stock, paying one-fourth in cash and giving two notes, one payable in three months and the other in six, the company will give the subscriber cement equal to the amount of stock he buys, delivering one-quarter of the cement in 1911 and one-quarter of the amount during each of the other three years after the plant is added to and in operation, the price of the cement to be ten cents below the market price at the time of delivery.

A number of dealers have taken stock and have paid their money. The Empire Portland Cement Company, it is understood through these solicitors, has bought the plant of the old York Company at Portsmouth, Ohio, and it is given out that the company intends to build a plant at Muskegon, Mich., transporting limestone from the northern part of the state or from some other available source of supply to the plant at Muskegon. In addition to giving its cement, the solicitors promise and guarantee that the company will pay 7 per cent dividends on the stock.

The Empire Portland Cement Company is regularly incorporated in South Dakota, the date of incorporation being November 1, 1910. The capital is given as \$2,500,000, split half and half in preferred and common.

One dealer in Wisconsin who subscribed wrote recently to the company to ship him a carload, but he says the letter was not answered. This may have happened during the time the company was moving its general offices from Cincinnati to room 609, Rector building, Chicago.

The officers are: Charles A. Loomis, president; J. W. Smith, vice-president; J. T. Bestor, secretary and treasurer; directors, E. C. Putmann, Ashland, Ky.; Tom C. McManee, Pierre, S. D., and H. W. Williams, Sheboygan, Wis.

A representative of ROCK PRODUCTS has called on two occasions at the office of the Empire Company, 609 Rector building, but on each occasion has been unable to obtain any information concerning the company or its plan of operation, so that we are unable to present any facts other than the representations made by the company's solicitors.

### CHICAGO CEMENT NEWS.

Chicago, Oct. 21.—Cement conditions here this month are about as lifeless as the Cubs ball team. Prices have been low and as the season for active trade is about closed, there is small hopes that they will advance before spring. Dealers are moving their stocks and there is some buying from the farmers, but big contracts are scarce.

The market is weak and only a strong demand can help out matters to any great degree.

D. Richter, Chicago representative of the Alpha

Portland Cement Company, stated: "Business has been good, although prices are low. Reports show that rain knocked out the cement business effectively, but notwithstanding that we have had a good trade. We now, however, consider the season practically closed and any orders that come in will be for cement for inside work, as the contractors are beginning to slow up on their outside jobs."

Gold Williams, sales agent and traffic manager of the Marquette Cement Manufacturing Company, stated: "Our business has been fair all year, but we consider the season about closed. Prices are all shot to pieces and have been all year. While the volume of business done this year has been greater than that of 1910, the low prices have kept the average down. Prices are now 50 to 60 cents a barrel lower than this time last year. We, of course, hope that next year's business will be good and that trade in the spring will pick up, but just now both city and country demand has dropped off."

George W. DeSmet stated: "Business is fair this month in spite of the fact that the cold weather is rapidly approaching. Prices are low but I think that the trade will hold up for another month at least."

F. J. Morse stated: "Business is fine and trade is picking up in our line."

William H. K. Bennewitz, of the McCormick Waterproof Portland Cement Company, stated: "Business is good and prospects are bright. Prices on waterproof cement are fair. Our business has been much better this year than last and we have had many more large projects to waterproof, as our product is becoming more widely known. We have just furnished a good-sized order to the James Stewart Company, contractors, for some lined oil tanks for the Linseed Oil Company of Edgewater, N. J. The waterproofing will be used to prevent the oil penetrating the concrete. There was recently finished a large tank at Armourdale, Kan., for the Swift Packing Company, to hold soap fats and this tank is the first successful waterproofing job of its kind ever built."

Bert Swett, of the Lehigh Portland Cement Company, stated: "Business is rather quiet now, as it is nearing the end in the active cement season and orders are not as heavy as in months past. Last Friday we sent our first shipment from the new Mason City (Iowa) plant, and will continue shipping from that plant from now on. While the cement business in general has not been as good this year as last, our trade has held up well and we have no complaint to make."

The Atlas Portland Cement Company reported business good and said that orders were coming in a satisfactory manner.

J. U. C. McDaniel, of the Chicago Portland Cement Company, stated: "Business just at present is good, although we expect a let-down about the fifteenth of November. Farmers today are using much cement and the dealers and contractors are buying well. Prospects look bright."

B. F. Affleck, of the Universal Portland Cement Company, stated: "The demand this month is rather quiet, due to much bad weather and prices are not high."

The German-American Portland Cement Company is running about the same as last month and reported business quiet.

### LOUISVILLE CEMENT NEWS.

Louisville, Ky., October 15.—Despite the fact that the Bluegrass cement market has shown no especial signs of improvement during the past few weeks, the situation remains normal and generally satisfactory. The cement manufacturers are thanking their lucky stars that a period of unusual building activity reigns throughout the South at present, for the stimulus provided in the active demand is undoubtedly the feature which makes the present standing as good as it is.

There is ample room for improvement in prices, the authorities say, but the result of the exceptionally fine demand in one of the record-breaking autumnal building seasons of Dixie is that a large volume of business is being handled at a lower margin of profit and aggregate returns are of a satisfying nature. With big building contracts being awarded each week in every section of the Ohio valley and throughout a good portion of the South, the call upon the cement manufacturing plants is naturally considerably swollen and is affording cause for a great deal of gratifying comment, but the fact remains that if the market were to strengthen up a bit there would be much more satisfactory returns all around.

"Some of the cement manufacturers of this section have been misled by the phenomenal amount of work that has developed throughout our dis-

tributing territory and have decided that they could afford to drop their price schedules," said one of the prominent cement authorities of Louisville the other day. "In my opinion such persons are blessed with more cement than foresight, for when times are prosperous in the building line, that is the time to rally round the standard and sustain the market so that commensurably larger profits will accrue. In some respects, I am glad to say, the situation seems to be clearing up and inasmuch as we may not bank upon it that next spring will be as fine a building year as the present season it is up to the trade to pull together and stand pat when activity dies down during the severely cold weather and then blossoms out again toward spring."

The Kosmos Portland Cement Company, according to C. M. Timmons of the Louisville offices, is enjoying the present business season in every sense of the word, although prices are not what they should be in some respects. However, said Mr. Timmons, the Kosmos manufacturers are sticking close to standard rates and are refusing business where it promises to be unprofitable. Kosmos cement is being used on numerous big Bluegrass jobs and the plant out at Kosmosdale is running to capacity limit upon a forced schedule, which indicates that extensive improvements and enlargements will have to be made in the works in the near future.

Henry Gray, secretary of J. B. Speed & Co., was inclined toward an optimistic view of the situation and said that things might be rated as being a little better than they were last month. The cement mills of the Speed company at Speed's Ind., are running full time and finding a ready market for their production.

An interesting announcement was made last week in Jeffersonville, Ind., just across the Ohio river from Louisville and in close proximity to one of the biggest cement-producing fields in the country, when the Utica Lime, Stone & Supply Manufacturing Company filed articles of incorporation and announced that it will work the neglected stone quarries of Utica, Ind., toward production of cement and other building materials. The Utica quarries are among the most valuable in the Ohio valley and were once extensively used toward the production of lime, but it is proposed by the members of the new company to commence cement manufacturing operations as soon as possible. Charles W. Kelly, of Jeffersonville, is an incorporator of the new company, which is capitalized at \$10,000, and states that a railroad connection between the grounds of his company and Jeffersonville would be built in the immediate future.

The Jahneke Navigation Company, of New Orleans, La., recently purchased an important interest in the Southern Cement Building Material Company, of Nashville, Tenn., and proposes to secure additional capital toward expanding the Southern plants in Nashville and in Sun, La., to meet the demands of a steadily growing amount of business. The interest now controlled by the Jahneke concern formerly was held by H. B. Baedeker.

The Kingstone Cement Manufacturing Company was incorporated in Los Angeles recently. Capital stock, \$200,000; incorporators, H. G. Peet, D. O. Peet, J. Alexander, C. M. Reed, George L. Bannister.

It is announced unofficially that the Lehigh Portland Cement Company will establish a new plant at Anniston, Ala. The addition, with the new plant at Spokane, will give the company a wide addition of territory.

The Panama Portland Cement Company, incorporated under the laws of Delaware, with principal offices in Buffalo, N. Y., and which is capitalized at close to \$2,000,000 has opened offices in Mobile, Ala.

The new mill of the Universal Portland Cement Company at Gary, Ind., has been completed and is in operation. This will increase the total annual capacity of the Universal to 12,000,000 barrels, and constitutes an important addition to the industry.

The Southern California Cement Company, with a capital stock of \$2,500,000, has been incorporated in Riverside, Cal. The incorporators are G. W. Reed, P. C. Black, C. M. Reed, G. H. Grifins, R. W. Church, C. T. Walker, all of Oakland, and I. L. Rose, of Newark.

The Yellowstone Portland Cement Company has filed a voluntary petition in bankruptcy in the United States District Court, scheduling liabilities of \$23,942 and assets at \$39,000. Claims amounting to \$19,442 are unsecured. Of the assets, \$25,000 represents machinery and tools, and \$14,000 open accounts.



# CEMENT STATISTICS FOR THE YEAR 1910

The statistics on the production of cement in the United States are worthy of careful study and consideration. We present herewith excerpts and tables from the bulletin which has just been issued by the Department of the Interior, United States Geological Survey, George Otis Smith, Director. This information has been compiled by Ernest F. Burchard, who has made a special study of the cement business. The report in part is as follows:

In presenting herewith the statistics of cement production in 1910 the figures published in the advance chapter from Mineral Resources for 1909, based on nearly complete returns, have been revised to accord with the latest returns collected by the Bureau of the Census, which conducted in the summer of 1910, a personal canvass of all the manufacturing plants in the United States. The acceptance of the figures obtained by the Bureau of the Census has resulted in increasing slightly the production of both Portland and natural cement in 1909, as reported by the Geological Survey in June, 1910. In the collection of the statistics for 1910 the survey has followed the usual methods of correspondence, and the replies have been so prompt that it has been possible to complete, early in the summer of 1911, the figures for the year 1910. On the 1st of January, 1911, according to responses to telegraphic requests sent to the larger cement companies, it was apparent that the Portland cement industry had made a new high record in 1910, and it was then estimated that the production for the year might reach 75,000,000 barrels. That this limit has been exceeded by more than one and one-half million barrels, as is shown by the following statistics, will doubtless prove surprising to nearly everyone closely in touch with the cement industry, since few estimates ventured beyond the limit predicted by the writer.

## Total Production.

The total quantity of Portland, natural and puzzolan cement produced in the United States during 1910 was 77,785,141 barrels, valued at \$68,752,092. As compared with 1909, when the production was 66,689,715 barrels, valued at \$53,610,563, the year 1910 showed an increase of 11,095,426 barrels, or 16.6 per cent, in quantity, and an increase of \$15,141,529, or 28.2 per cent, in value. The increase in quantity is one of the largest ever recorded, and the fact that the increase in value was proportionately higher than the increase in production indicates that trade conditions were slightly more satisfactory than during 1909. The distribution of the total production among the three main classes of cement is shown in the table printed herewith. For comparison the figures for 1908 and 1909 are also presented.

## Portland Cement Production.

The total production of Portland cement in the United States in 1910 as reported to the Geological Survey was 76,549,951 barrels, valued at \$68,205,800. It is interesting to note that this quantity reduced to tons is equivalent to 12,986,182 long tons, valued at \$5.25 per ton. As compared with the pig-iron output for 1910, which was 27,303,567 long tons, having an estimated value of \$425,115,235, or \$15.57 per ton, the Portland cement production approximates 47.5 per cent of the quantity of pig iron and 16 per cent of its value. As compared with the production of Portland cement for 1909, which was 64,991,431 barrels, valued at \$52,858,354, the output for 1910 represents an increase in quantity of 11,558,520 barrels, or 17.7 per cent, and an increase in value of \$15,347,446, or 29.03 per cent. The average price per barrel in 1910, according to the figures reported to the survey, was a trifle less than 89.1 cents, as compared with 81.3 cents in 1909.

Production of Portland cement in the United States in 1909 and 1910, by States.

1909				1910			
State.	Producing plants.	Quantity (barrels).	Value.	State.	Producing plants.	Quantity (barrels).	Value.
Pennsylvania.....	24	22,869,614	\$15,969,621	Pennsylvania.....	25	26,675,978	\$19,551,268
Indiana.....	6	7,026,081	5,331,468	Indiana.....	6	7,219,199	6,487,508
Kansas.....	11	5,334,299	3,792,764	Kansas.....	11	5,655,808	5,359,408
Illinois.....	5	4,241,392	3,388,667	Illinois.....	5	4,459,450	4,119,012
New Jersey.....	3	4,046,322	2,813,162	New Jersey.....	3	4,455,589	3,858,088
Missouri.....	4	3,445,076	2,808,916	Missouri.....	4	4,184,696	3,067,265
Michigan.....	12	3,212,751	2,619,259	Michigan.....	12	3,687,719	3,378,940
California.....	6	4,435,714	6,785,764	California.....	7	6,385,568	8,943,210
Washington.....	2			Washington.....	2		
New York.....	7	2,139,884	1,859,109	Illinois.....	5	4,459,450	4,119,012
Ohio.....	8	1,813,521	1,359,245	Missouri.....	4	4,184,696	3,067,265
Iowa.....	1			New Jersey.....	3	4,046,322	2,813,162
Kentucky.....	1	1,205,944	1,117,338	Missouri.....	4	3,445,076	2,808,916
West Virginia.....	1			Michigan.....	12	3,212,751	2,619,259
Texas.....	3	1,438,021	1,519,267	New York.....	7	2,139,884	1,859,109
Oklahoma.....	2			Ohio.....	8	1,813,521	1,359,245
South Dakota.....	1			Iowa.....	1		
Colorado.....	2	1,019,328	1,024,317	Kentucky.....	1	1,205,944	1,117,338
Arizona.....	1			West Virginia.....	1		
Utah.....	2	663,679	923,447	Texas.....	3	1,438,021	1,519,267
Maryland.....	1			Oklahoma.....	2		
Virginia.....	1	949,331	667,163	South Dakota.....	1		
Massachusetts.....	1			Colorado.....	2	1,019,328	1,024,317
Alabama.....	1			Arizona.....	1		
Georgia.....	1	1,070,474	878,387	Utah.....	2	663,679	923,447
Tennessee.....	1			Maryland.....	1		
Total.....	106	64,991,431	\$52,858,354	Virginia.....	1	949,331	667,163
				Massachusetts.....	1		
				Alabama.....	1		
				Georgia.....	1	1,070,474	878,387
				Tennessee.....	1		
				Total.....	111	76,549,951	\$68,205,800

This represents the value of the cement in bulk at the mills, including the labor cost of packing, but not the value of the sacks or barrels. This average price per barrel, is about 16.4 cents higher than the average price received for cement in the Lehigh district and 14.1 cents higher than that in the Eastern States; it is 1.9 cents lower than the average price in the Central States, 13.9 cents lower than the average price reported from the Western States, 4.9 cents lower than the average price in the South, and 48.9 cents lower than the average price received at the Pacific Coast plants. In the average price for the country is included the value of nearly 75,000 barrels of white Portland cement, which sold for an average of \$2.86 per barrel.

## Production by States.

In the following table the Portland cement production

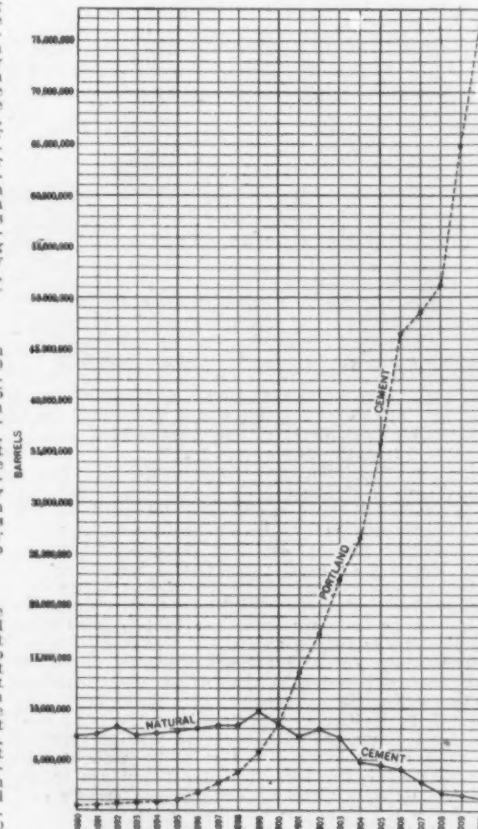


FIGURE 1.—Production of Portland and natural cement, 1870-1910.

is given by States, or by groups of States where there are less than three producers in a single State. By the term "producer" is meant a Portland cement manufacturing company, whether the company operates one or more plants. In the table the term "producing plant" is applied to a mill or group of mills located at one place and operated by one company, but each establishment at a different place is counted as a plant. For instance, the plant of the Atlas Portland Cement Co., near Hannibal, Mo., consisting of two mills, is counted as one plant, but the plants of the Lehigh Portland Cement Co., at Ormrod, West Coplay, and Fogelsville, Pa., are counted as three plants, because of their different locations.

## Growth of the Portland Cement Industry 1890-1910.

The growth of the industry for the years 1890 to 1910, inclusive, is illustrated graphically in figure 1. For comparison the decline in the natural cement industry is plotted on the same diagram.

In the following table statistics are given covering the annual production of Portland cement in the United States from the inception of the industry in the early seventies to the present day.

On examination of this table it will be seen that the industry showed a fair but not in any way remarkable rate of growth from its commencement in the seventies until 1895. At the latter date, however, a very striking development commenced, coincident, it may be noted, with the development of coal burning in the rotary kiln. This rapid rate of growth continued until 1907 when it was checked temporarily by the financial crisis of that year.

On examining the cement statistics for the series of years, it will be seen that the output of Portland cement has so far shown an increase each year, rising from 42,000 barrels in 1880 to 335,500 barrels in 1890, to 8,482,020 barrels in 1900, and to 76,549,951 barrels in 1910. The natural cement production, on the other hand, reached its maximum in 1899, with an output of 9,868,179 barrels. Since that year it has shown an almost continuous decrease annually, until now it has become a relatively unimportant factor in the cement situation.

## Condition of the Portland-Cement Industry.

In general trade conditions were slightly better in 1910 than in 1909, as is shown both by the higher average price received per barrel and by the increased output, but prices were far from satisfactory, especially in the Lehigh district and in the Eastern States as a whole. Some of the larger plants reported no shutdowns except those caused by accidents or the necessity for repairs, but many others were shut down for intervals ranging from one month to five months on account of full stock houses and little demand for cement at certain seasons. Some plants took advantage of these conditions and made extensive alterations in power plants and grinding machinery during the period of enforced idleness. In Michigan the plants that use marl dredged from lake bottoms are regularly shut down during the winter months, so that the normal manufacturing season is only 9 or 10 months long, but some plants were unable to maintain operations even for this period.

In the comparison of the cement output by districts with the population of the same districts, marked differences in cement production per capita are evidenced. In the Northeastern States (Pennsylvania, New Jersey and New York) the annual output of cement per capita is in the neighborhood of 435 pounds, which is considerably in excess of that of Germany, and therefore indicates that the industry here has reached the stage at which it may be necessary to build up an export trade in order to maintain good prices and

Production of Portland cement in the United States, 1870-1910, in barrels.

Year.	Quantity.	Value.	Year.	Quantity.	Value.
1870-1879.....	82,000	\$246,000	1904.....	798,757	\$1,383,473
1880.....	42,000	126,000	1905.....	990,324	1,566,830
1881.....	60,000	150,000	1906.....	1,543,023	2,424,011
1882.....	85,000	191,250	1907.....	2,677,775	4,315,891
1883.....	90,000	195,000	1908.....	3,692,284	5,970,773
1884.....	100,000	210,000	1909.....	5,652,366	8,074,371
1885.....	150,000	292,500	1910.....	8,482,020	12,332,360
1886.....	150,000	292,500	1911.....	12,711,225	20,864,078
1887.....	250,000	487,500	1912.....	17,230,644	20,864,078
1888.....	250,000	487,500	1913.....	22,342,973	27,713,319
1889.....	300,000	500,000	1914.....	26,505,881	33,355,119
1890.....	335,500	704,050	1915.....	35,246,812	33,245,867
1891.....	454,813	967,429	1916.....	46,463,424	52,466,186
1892.....	547,440	1,153,600	1917.....	48,785,390	53,992,551
1893.....	590,652	1,128,138	1918.....	51,072,612	43,547,679
			1919.....	64,991,431	52,858,354
			1920.....	76,549,951	68,205,800
			Total.....	429,224,197	428,977,154

\* The figures for 1890 and previous years were estimates made at the close of each year, but are believed to be substantially correct. Since 1890 the official figures are based on complete returns from all producers.

## Total production of cement in the United States in 1908, 1909, and 1910, by classes.

Class.	1908		1909		1910	
	Quantity (barrels).	Value.	Quantity (barrels.)	Value.	Quantity (barrels.)	Value.
Portland.....	51,072,612	\$43,647,679	64,991,431	\$52,858,354	76,549,951	\$68,205,800
Natural.....	1,686,682	\$34,509	1,537,638	\$62,756	1,139,239	\$53,006
Puzzolan.....	151,451	\$5,468	160,646	\$9,433	95,951	\$3,286
Total.....	52,910,745	\$44,477,653	66,689,715	\$53,610,563	77,785,141	\$68,752,092

suitable business conditions. In the Southeastern States, on the other hand, the annual production of cement amounts to less than 50 pounds per capita, and indicates that there is a movement of cement from the Northeastern and Central States into the Southeast. Unfortunately, no figures are given with regard to the consumption of cement per capita in any of the sections of the United States, but it is assumed that production and consumption in the States of the Middle West about balance one another. The average production of Portland cement for the whole United States is about 283 pounds per capita, which is reported to be in excess of the German production per capita. In view of the fact that Germany is pre-eminently a cement-exporting nation, this comparison is in itself of considerable commercial interest.

E. C. Eckel considers that the growth of the Portland-cement industry has not ended, and that its present relative importance is rarely understood. Its increase in size and commercial influence brings certain consequences which might well be borne in mind at present. It can no longer be considered that the cement industry is small and unimportant, and that its condition is purely a matter of private or local interest. On the contrary, it must be realized that the soundness of the cement industry has now become a matter of importance not only to cement manufacturers but to commercial and financial interests generally. In capital employed it probably ranks next to iron and coal among the American industries. It apparently far outranks in this respect the gold-mining industry of the United States, including Alaska. Even the copper industry falls into lower place, for Finland has recently estimated that the value of all the copper mining and smelting plants of the United States is only \$110,000,000. From the banking point of view, therefore, the cement industry is one of the world's three great extractive industries. On the basis of capital actually employed, the pig-iron industry of the United States would represent an actual investment of somewhat over \$300,000,000, while the cement industry would represent a little under \$150,000,000. The possibility is also pointed out that the cement industry of the future may not be an independent industry, but rather an incidental attachment to the iron and alkali industries. Recent developments have been by some considered as pointing in this direction. The result with regard to costs in at least one of these cases would be little short of revolutionary, but until this tendency is much more clearly defined it cannot be taken seriously into account by the cement manufacturer.

#### PHILADELPHIA CEMENT NEWS.

Philadelphia, Oct. 19.—There is very little change in the cement situation from last month. The considerably magnified advance anticipated at the opening of fall has not as yet been realized. There is extensive building work going on, but the bulk of it is confined to operations of rows of two-story dwellings. Admittedly a large amount of cement is naturally employed in the total of this class of construction work, but singly as a cement-using industry it is not sufficient to inspire the trade. Work in reinforced concrete houses, dams and such work employing thousands of barrels of cement is lacking in this territory at present, and there is no indication that there will be any great enlargement of work before spring.

#### NEW YORK CEMENT NEWS.

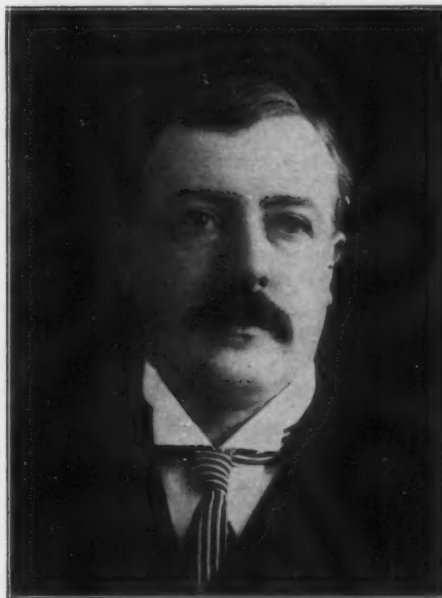
New York, Oct. 18.—Business in the local cement market was dull and lifeless during the past month. The industry is in a worse shape at the present time than it was this time last month and it has probably never been so demoralized. Another reduction in the price of cement was announced during the past month and it is now quoted at 65 cents in bulk, at mill. This quotation is within 5 points of the lowest price ever recorded in the history of the trade. In 1904 the market dropped to 60 cents in bulk at mill. Cement manufacturers claim that the new quotation is based on a cost less than that of manufacture but it has been made necessary by the price cutting tactics of producers and by a decline in the consumption of the production. Large accumulations of stocks are reported at all producing points as well as in store. Some interests are of the opinion that the smaller producing concerns will not be able to weather the present storm and that receivers may become busy before the year is out.

G. A. Moliter, of the Northampton Cement Company, spoke as follows in regard to the present situation: "Conditions in the local cement market are very slow and the demand continues extremely quiet. The price of cement has been cut 10 cents per barrel during the past month and manufacturers are quoting 65 cents in bulk at the mill. This low figure has been brought about by the price-cutting war between the small and large cement mills, and the heavy stocks of cement in dealers' hands. The prospects for improvement in the near future are not particularly bright just at the moment."

E. B. Morse, of the Frank B. Morse Company, followed: "The demand for cement was fairly good during the past month and a reduction of 10 cents per barrel has occurred with quotations now on the basis of 65 cents in bulk at the mill. We do not look for any improvement in the general situation in the near future. In our opinion business will probably continue along quiet lines for the balance of the year."

W. P. Corbett, sales manager of the Alsen's American Portland Cement Company, in reviewing conditions in the local cement trade, said: "In the history of the cement trade the market was never more demoralized than at the present time. Some are of the opinion that worse conditions existed in 1904, when cement was selling at a lower figure than 65 cents, but to my mind the present conditions are far worse than in 1904, because in that year the low prices followed a long period of prosperity and satisfactory prices, and the cement manufacturers' treasuries were well filled, and they were at the same time able to meet a temporary loss. At the present time, however, after three years of poor business and low prices, manufacturers are operating at cost, if not at an actual loss, so the present depression is all the more pronounced. This state of affairs closely followed by a recent reduction of 10 cents, has made the situation more acute. Many of the cement companies are hanging on 'by the skin of their teeth' and ere long I would not be surprised to hear of a 'splash.' There is no doubt that the industry is suffering from over-production, in spite of the fact that consumption is larger than ever before."

J. R. Morron, president of the Atlas Portland Cement Company, stated: "The recent 10 cent cut in the price of cement was due largely to the fact that our company had a very large supply of cement at its Lehigh Valley mills which it was anxious to dispose of before September 1. The smaller manufacturers have been selling for some time at from 5 to 7 cents less than our prices. Of



THE LATE CHARLES A. MATCHAM.

course, if they retaliate by a still further cut, we may again be compelled to reduce our prices. Nothing definite has as yet been decided on."

S. Wells, manager of the New York office of the McCormick Waterproof Portland Cement Company, added: "The demand for our waterproofing compound has been fairly good during the past four weeks and things look better at present than they did in September and we anticipate considerable business within the near future, the outlook for October being bright. Our goods have been specified on a number of big operations and we expect to hear from the architects within a short time. During the past week we have received contracts for several fair sized jobs in the vicinity of New York."

#### DEATH OF CHARLES A. MATCHAM.

It is with the deepest regret that the death of Charles A. Matcham, President of the Allentown Portland Cement Company, is announced. He passed away Sept. 22 at his home, 1727 Hamilton street, Allentown, Pa., the cause of his death being pulmonary trouble. Mr. Matcham was one of the most prominent men in the cement industry, and was a magnificent example of the successful man, risen to great heights in the commercial world through close application, unusual executive ability and business integrity. On his death bed he was conscious to the end and expressed the hope, as he said farewell to the members of his family, that he would meet each one in the future world.

The death of Mr. Matcham was not unexpected. About a year ago he contracted a severe cold on his lungs. In the hope of regaining his health he moved to his cottage at Pocono Pines, where he spent the spring and summer. About the first of September he asked to be taken to his home in Allentown, where he gradually declined.

Every man who is connected in any way with the great industry which this prince of men helped to build up feels a sense of personal loss in his passing, for he was an inspiration to all who knew him or had any dealing with him.

Mr. Matcham was born in Torquay, Devonshire, England, January 15, 1862. He was the third son of Charles and Elizabeth Matcham. He was educated in the schools of Hambledon and Brighton, England. After becoming engaged in the engineering business in London in 1875, he also became a member of a night class of an engineering school and at the public examinations won first prize and received honorable mention for mechanical drawing and designing at the Royal Academy of South Kensington, England. In 1879 he entered the employ of the American Bell Telephone Company that had recently obtained concessions for establishing telephone exchanges in different countries in Europe. He built exchanges and laid out work in Antwerp, Brussels and Charleroi, in Belgium, and also in Rega and St. Petersburg, Russia. Under his direction the Winter Palace of the Czar was wired and he thus assisted in introducing the telephone in Russia.

Thinking that with the experience he thus obtained he would have better opportunities for advancement in America, Mr. Matcham came to the United States in the fall of 1881 and made his way direct to Chicago, where he became connected with the Chicago Telephone Company, for whom he built exchanges. Later he went to Memphis, Tenn., to rebuild the telephone exchange there, and in 1884 he went east and in Allentown became connected with the Pennsylvania Telephone Company and managed it for several years.

In 1890, associated with his brother-in-law, Thomas D. Whitaker, he established a cement plant near Phillipsburg, the business being conducted under the name of the Whitaker Cement Company. Mr. Matcham placed the works in operation and continued as general superintendent until 1893, when the plant was sold to the Alpha Portland Cement Company, with which he continued as general superintendent until 1897. In that year, in connection with Col. H. C. Trexler, he organized the Lehigh Portland Cement Company and was manager of its plants for a number of years. In recent years he erected the mills of the Allentown Portland Cement Company, Evansville, Berks county, and was vice-president and general manager of the company. He was president of the Fuller Engineering Company up to a year ago, when his illness compelled him to retire from active pursuits. He was also an inventor of cement manufacturing machinery.

Mr. Matcham was a member of several societies having for their object the dissemination of knowledge concerning civil engineering and allied sciences. He belonged to the American Society of Civil Engineers, the American Institute of Mining Engineers, the American Society for Testing Materials, the National Geographical Society, the Manufacturers' Club of Philadelphia, the Livingston Club of Allentown and the Pomfret Club of Easton. He was a Republican in politics and was a member of Grace Episcopal church of Allentown. He married Miss Margaret Ormrod, a daughter of Mr. and Mrs. George Ormrod. She survives with three children, Dorothy Margaret, Catherine Elizabeth and Charles Ormrod; four brothers and four sisters. An elder brother, Frank Matcham, is one of the leading theatrical architects of London.

The Popular Science Monthly has an article on the subject of cement plants in California interfering with the orange growing industry. It is said that the dust from the cement plant settles on the leaves and causes insufficient nourishment and a consequent deterioration of the tree and a correspondingly diminishing crop. This is a suggestion to some inventive genius to evolve a plan for catching the dust. There have been several systems used but they are too expensive, or inefficient. This same condition exists in other industries such as the manufacture of lime, gypsum and crushed rock.

An English syndicate has purchased the water rights of the Paterson-Eckert Lumber Co., at Chilliwick, B. C., and it is understood that a cement plant will be erected there to cost in the neighborhood of \$500,000.





## The National Lime Manufacturers' Association

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## LIME ON THE FARM

### This Valuable Commodity Useful in Restoring Wornout Soil to Fertility—Methods For Testing and How to Go About It.

This article is addressed directly to the dealer who wants information on this subject, information that will enable him to advise the farmer accurately on how much lime to use and how to use it to the best advantage for the increased production of his soil. The facts herein presented are the result of scientific experiments in different states where departments are maintained for the purpose.

From a study of the state reports the following general conclusions may be advanced:

A plot of ground is in need of lime when it fails to produce a good crop of clover, or when the clover crop contains patches of sorrel.

Lime should never be used alone, but always in connection with some organic fertilizer.

Care must be used not to use too much lime, as this will tend to waste the plant food stored in the soil. If the lime is coarsely ground more must be used, but its effect will be more lasting.

The ratio of calcium oxide to magnesium oxide varies for each plant, but for general farm purposes may be taken as seven to four. Therefore the lime to be used should contain sufficient magnesia to establish this ratio to the soil.

Whether the lime should be applied as ground quicklime, hydrated lime, air slaked lime, or ground limestone, depends chiefly upon the cost per unit of calcium oxide (it being assumed that the four substances are of the same fineness). Thus 500 pounds of ground quicklime, which is the quantity recommended for one acre, is equivalent to 950 pounds of hydrated lime or 1,250 pounds of either ground limestone or air slaked lime.

Lime is sometimes used to improve drainage conditions in the soil, and for this purpose ground quicklime alone is suitable.

### Method of Testing.

Perhaps the simplest, though nevertheless a very satisfactory test of the condition of a soil as to its need of lime, is that made by bringing a piece of blue litmus paper in contact with the moistened soil and observing the intensity and rapidity of the reddening thus produced. Though unsatisfactory in a quantitative sense, much valuable information regarding the amounts of lime which should probably be used may thus be obtained after some experience. Any farmer may perform this experiment and the blue litmus paper can be obtained at any drug store. All that is necessary for the success of the test is that careful observation be given it.

Wahnschaffe, in speaking of the reaction, says: "Since the free carbonic acid of the soil reddens the paper, one must allow it to dry and observe whether the red color is still visible." Roscoe and Schorlemmer state that carbonic acid readily decomposes into water and carbon dioxide. In consequence of this, litmus paper which has been turned red in the aqueous acid becomes blue on drying. They then immediately add that the reddening of the litmus solution may be brought about by conducting into it carbon dioxide, but that upon heating the solution the carbon dioxide is expelled, and after boiling a few seconds the liquid again becomes blue.

Muntz states that it is easy to tell whether a

soil is acid, since, if such is the case, it imparts a black color to ammonium hydroxide when the two are brought in contact. He adds that in the case of soils which are not acid the organic matter is in an insoluble combination with lime and consequently yields nothing to ammonium hydroxide. "The same has been found by us to be the case with a sample of fertile adobe soil forwarded by Prof. Goss from New Mexico," says the Rhode Island report. Similar observations have been made on one Massachusetts and two Rhode Island soils, where wood ashes or calcium carbonate in some form had been applied to the land with such frequency as to entirely overcome its acid reaction upon blue litmus paper. Snyder, however, calls attention to a soil which he says contained 3.15 percent of lime and 4.19 percent of carbon dioxide, and yet, when treated with ammonium hydroxide for the determination of the so-called free humic acid, yielded a dark brown extract amounting to three to four-tenths of a percent. This would tend to throw some doubt upon the reliability of the treatment with ammonium hydroxide as a means of arriving at the lime requirements of all soils, though it is not improbable that for soils of certain sections of the United States which are possessed of definite characteristics the treatment may be of considerable value, as was the case with the particular acid soils for which Muntz employed the method.

### Holleman's Method.

Holleman in searching for the cause of the occasional ineffectiveness of gas lime on certain stiff clays in Holland, concluded that it might be due to the presence in them of considerable calcium carbonate. He thereupon made determinations of the lime removable by water and by water saturated with carbon dioxide. The water soluble lime was determined as follows: Twenty grains of air-dried soil were digested with frequent shaking, at ordinary temperature, for forty-eight hours with one liter of distilled water. Five hundred grams of the filtrate, to which a few drops of acetic acid had been added, were evaporated, the residue taken up in water and first a little acetic acid and then a measured quantity of  $n/10$  solution of ammonium oxalate added and the volume made up to 100 c. c. After filtration the excess of oxalic acid is estimated by titrating with a  $n/10$  solution of potassium permanganate. For determining the lime soluble in carbonic acid twenty grams of air-dried soil are taken and sufficient distilled water added to make up one liter; it is then saturated with carbon dioxide and after twenty-four hours filtered and treated as described above. From the data obtained by Holleman, he concluded that where extraction with carbonic acid removed 0.15 percent, or less, of calcium oxide, stiff clay soils would be benefited by liming.

Professor Cyril G. Hopkins, of the University of Illinois experimental station, says in a recent paper: "I shall not attempt to give you the present status of the invoice of Illinois' stock of fertility, taken by ten years of analytical work, nor the detailed results thus far secured from thirty soil experimental fields, several of which have been operated for nine seasons and on most of which there are more than forty separate plots whose individual records are taken every year; but you will permit me to call your attention to the increase produced in 1910 by phosphorous and limestone upon the yield of clover as the best key to permanent systems of agriculture on our normal soils, both in grain farming and in livestock farming. As an average of sixteen trials, most of which include several tests, the yield of clover was increased from 1.70 tons to 2.87 tons of hay per acre, making an average increase of 1.13 tons or 65 percent. On ten of these fields where livestock farming is practiced the average increase was slightly more than one ton of clover per acre above yields secured with manure alone, and on six fields in grain farming the increase was  $1\frac{1}{4}$  tons above what was secured without phosphorous and limestone. Of course more clover means more corn to follow, whether utilized in green manure or in farm manure."

It may be said that these results have been secured by the application of one ton of natural rock phosphorous and two tons of ground limestone per acre.

Milwaukee parties are interested in a project to erect a plant at Racine, Wis., for the manufacture of a patent lime, termed "block lime."

The Pennsylvania Lime Products Co., has been incorporated at Philadelphia, for \$100,000. The incorporators are Isaac D. Beahm of Port Carbon, Pa., Alfred P. Smalley of Philadelphia, and Walter S. Smalley of Wilmington, and the capital stock is \$100,000.

### NEW YORK LIME NEWS.

New York, Oct. 17.—A slight improvement has been noted in the demand for lime in the local market during the past four weeks, and a fair amount of business has been transacted. On the whole conditions are brighter than they were a month ago, but business to date is below the normal for the fall months. Dealers report that the fall season so far is a backward one and are of the opinion that conditions will improve during October and November.

O. F. Perry of the Rockland-Rockport Lime Company, in reviewing conditions in the local lime market, said: "Business in the lime trade during the past month was fair, but the fall business received to date has been away below the seasonable average. Builders are finding it difficult to negotiate loans as several large loan companies have stopped issuing building money. Prospects for the near future are not very promising. Prices remain unchanged and are as follows: Common lime, 200-pound barrel, 92 cents; 300-pound barrel \$1.37. Finishing lime is quoted as follows: 200-pound barrel \$1.02; 300-pound barrel \$1.47; 350-pound barrel \$1.62; in lots of 500 barrels."

F. F. Comstock, president of the Comstock Lime and Cement Company, added: "Business was fairly good during the past four weeks and things are looking a little better than at this time last month. To date the average fall business has not materialized and the season is a backward one. The general feeling I find in the trade is that business during the fall months will not be up to the seasonable average."

E. B. Morse of the Frank B. Morse Company, stated: "The demand for lime continued fairly active during the past month, although it was not what it ought to be at this season of the year. Builders are unable to negotiate loans as many of the large lending institutions have shut down on building loans. The fall season so far has been a rather backward one."

### INCREASES OUTPUT AT BERKELEY.

Baltimore, Md., Oct. 17.—The Security Cement & Lime Co. have been operating their Berkeley plant to its maximum capacity for some time past and shipping its high quality lime and lime products throughout the eastern section of the United States. They are at present behind with their orders and have decided to increase their capacity at least 50 per cent. The Berkeley plant, in addition to turning out lime, also manufactures crushed stone and pulverized stone for both ballast, construction, chemical and manufacturing purposes. Work on the reconstruction of the plant will be started immediately. This will give them a capacity of about three thousand tons of crushed stone, pulverized stone and fluxing stone per day. Their crushed stone has been pronounced of the very finest quality for ballast, road making and concrete purposes by those who have used it. The pulverized stone and fluxing stone are taken from stratas of the purest quality of limestone running 98 per cent  $\text{CaCO}_3$ . This addition to the plant will also increase their output of lime to 1,200,000 bushels per annum. This is marketed principally in high grade form and as Alca lime for plaster, stucco, and general masonry work. They, however, sell lime in all forms. It is gratifying to note that in spite of the short time that these plants have been in operation and the general quiet condition of business, their products have gained such a reputation for excellence as to find it necessary to increase their already large output.

Among the more recent sales of Security Portland cement may be mentioned the following:

	Barrels.
District of Columbia, for general government work	60,000
Miscellaneous buildings in Washington	28,000
Western Maryland Ry. Co., for new Connellsville Extension	50,000
Baltimore City, sewerage work	48,000
Baltimore City, other departments	14,000
Miscellaneous buildings in Baltimore, such as Baltimore Bargain House, American Ice Co., Industrial Building ("Bee Hive"), Roland Park Co., Maryland Steel Co., Mt. Hope Asylum, United Ry. & Electric Co., etc., etc.	51,550
Chambersburg, Pa., sewerage and water departments	4,600
Hagerstown, Md., general work	11,000
Winchester, Va., street work	2,000
Frederick City, Md., street work	4,500
Virginia Life Insurance Building, Richmond, Va.	2,500
Government Soldiers' Home, Old Point, Va.	1,100
B. & O. yard improvement, Brunswick, Md.	1,350
B. & O. yard, Cumbo, W. Va.	6,000
Crownsville, Md., Hospital	2,500
Springfield, Md., Hospital	1,000
Eagle Metallic Copper Co., Sharmian, Pa.	1,000
Hampshire Southern R. R. Co.	1,000

Charles Kritzer, of the Kritzer Company, manufacturers of hydrating plants, Chicago, is spending most of his time at St. Joseph, Mich., searching for a cure for rheumatism. In a recent letter Mr. Kritzer says he is still searching for the cure, but up to date has not found it.



# LIME INDUSTRY STATISTICS FOR 1910

One of our practically inexhaustible natural resources is lime. The available limestone rock widely distributed over the United States can not be estimated even in millions or billions of tons. It is a fact also that the more lime is "thrown away"—scattered over the ground—the better it is for the country. Lime is a great soil renovator, and while it is believed to have no actual fertilizing value in the sense of being in itself a plant food, it is a well-known fact, not only among farmers, but among soil scientists, that spreading it upon the fields and plowing it under makes many soils more productive by rendering available the plant food they already contain. Lime has also a great variety of other highly important uses; in fact, few mineral products have so wide a scope of usefulness.

A little more than half the lime manufactured in the United States is used as structural material—in lime mortars, Portland cement mortars, concrete, gypsum plasters, and whitewash. Large quantities are also used in the manufacture of chemicals, in clarifying many products, in the milling and paper industries, in sanitation, in the smelting and tinning industries, in sugar-beet manufacture, etc.

The total production of lime in 1910, according to a statement compiled by Ernest F. Burchard, just made public by the United States Geological Survey, was 3,469,416 short tons, valued at \$13,809,290, as compared with 3,484,974 short tons, valued at \$13,846,072 in 1909. This represents a slight decrease in tonnage, viz., 15,558 tons, and a decrease in value of \$36,782. The average price per ton in 1910 was \$3.98, as compared with

\$3.97 1-3 in 1909, or an increase of two-thirds of a cent a ton. The total number of producers reporting in 1910 was 1,123, as compared with 1,234 in 1909, a decrease of 111. This apparently large decrease in the number of producers was due partly to the inactivity of a number of small kilns operated by farmers for burning lime for local use as fertilizer, and partly to the abandonment of old and worn out kilns. The heaviest decrease in the number of producers was in Pennsylvania, but Porto Rico, Maryland, West Virginia, and Wisconsin showed marked decreases. The five leading states in 1910 were, in the order of their production, Pennsylvania, Ohio, Wisconsin, Maine and Missouri. Pennsylvania produced in 1910 877,714 short tons of lime, valued at \$2,440,350, the average price being \$2.78 per ton. There were 372 active producers in Pennsylvania, including a considerable number of farmers who produced only a few hundred bushels each for fertilizer. The Pennsylvania production represented a decrease in quantity of 3,725 short tons, and in value of \$92,104, as compared with 1909, the price falling 9 cents per ton. In Ohio there were produced in 1910 415,285 short tons, valued at \$1,647,335, representing an increase in quantity of 71,531 short tons, and in value of \$405,616. The average price per ton in 1910 was \$3.97, which represented an increase of 35 cents over the price in 1909. There were 36 producers in Ohio in 1910 as compared with 33 in 1909. In 1910 Wisconsin produced 248,238 short tons of lime, quarried from native rock, valued at \$959,405, besides 21,000 tons burned from stone imported from other states. The stone imported from other states was mainly high-

calcium limestone, the lime from which was used by beet sugar refiners. The 1910 production in Wisconsin as compared with that of 1909 represents a decrease in quantity of 20,012 short tons, and in value of \$108,095. The price per ton in 1910 was \$3.86 as compared with \$3.98 the preceding year, and there were 40 producers in 1910 as compared with 46 in 1909. Maine produced in 1910 179,656 short tons of lime, valued at \$893,599, at an average price of \$4.97 per ton. This represents an increase in quantity of 1,092 tons, but a decrease, in value, of \$64,091 and, in average price, of 39 cents. In 1910 there were 7 producers as compared with 9 in 1909. Missouri produced in 1910 193,964 short tons of lime, valued at \$837,681, the average value per ton being \$4.32. As compared with the 1909 production this represents an increase in quantity of 11,504 tons, and in value of \$22,314, but a decrease in average price per ton of 15 cents. In 1909 26 operators reported production as compared with 27 in 1909.

The five leading states in the 1910 production are as follows:

	Short tons.	Value.
Pennsylvania .....	877,714	\$2,440,350
Ohio .....	415,285	1,647,335
Wisconsin .....	248,238	959,405
Maine .....	179,656	893,599
Missouri .....	193,964	837,618

In 1910 there were 52 manufacturers of hydrated lime as compared with 50 in 1909, and the production in 1910 was 320,818 short tons, valued at \$1,288,789, an average price per ton of \$4.02, as compared with 204,611 short tons valued at \$904,900, or an average price of \$4.43 per ton in 1909.

## PITTSBURGH LIME NEWS.

Pittsburg, Pa., Oct. 17.—The lime companies as a rule have been unusually busy the past six weeks. More agricultural lime has been sold this year than ever before and concerns which furnish this material have been full with business. The demand for high grade lime has not been so good as in some former years. On the other hand the limestone concerns have been working full because of the splendid market for crushed stone for county and city road building. It is likely that the sum total of the lime business for this year to date will run considerably ahead of any previous year with Pittsburgh concerns.

A. G. Morris & Sons, whose plant is located at Winfield, Pa., on the P. R. R. was very busy. They have some big contracts for county road work and also for Pittsburgh street work, and are now working 80 men. The company is making an unusually large amount of hydrated lime and has completed a very successful season in shipping agricultural lime.

A. H. Lauman of the National Mortar & Supply Co. reports their agricultural lime business very satisfactory the past summer. They are making more than the average quantity of hydrated lime.

The Reynoldsville Lime & Clay Works of Hancock, Pa., which is owned by Dr. H. Nolan and C. J. Arnold of Reynoldsville, Pa., has its plant completed, six kilns, being the largest in Western Pennsylvania. The company is prepared to take care of a large amount of business.

The Grey Lime Fertilizer Co. which is capitalized at \$10,000 has been organized at Lisbon, Ohio, and has started to develop a large acreage leased by them just outside the town limits. A large kiln was fired last week and tests show the lime to be of superior quality. The company will install a 50-ton crusher, three kilns and will build a warehouse 150x50 feet. Among those interested are Fred Davis, J. A. Smith and Howard Bye of Lisbon.

John S. Stitt of Blairsville, Pa., recently exhibited at the Clarion county fair a very fine display of lime for the American Lime & Stone Co.

The Crescent Portland Cement Co. has let the contract for the erection of a large stock house at Wampum, Pa., to have a capacity of 200,000 barrels.

The Tuna Valley Pressed Brick Company, Bradford, Pa., was incorporated under Pennsylvania state laws October 3. Capital, \$100,000.

The Dillsburg Clay Products Company, Dillsburg, Pa., was incorporated under Pennsylvania state laws September 13. Capital, \$5,000.

The Central Brick Company of Barnegat of New Jersey has been incorporated to manufacture and deal in brick, clay, etc., with a capital stock of

\$150,000. The incorporators are: S. G. Davis, J. T. Lovett, Jr., W. G. Conrad, G. B. LaBarre of Barnegat, N. J.; and J. T. Lovett, J. H. Cook of Red Bank, N. J.

The Westchester Unit Brick Company of Tuckahoe, N. Y., has been incorporated with a capital stock of \$45,000, to manufacture brick, tile, artificial stone, etc. The incorporators are: R. C. Lee, H. B. Weiss, P. J. Weinberger, all of New York City.

The Mount Union Refractories Co., capital \$300,000, has received a Pennsylvania charter and elected R. P. M. Davis president and C. V. Hackman superintendent. Both of these men were formerly connected with the Harbison Walker Refractories Co. of Pittsburgh. The new company has started work on a plant which will have a capacity of 80,000 silica and magnesite brick daily. It has one of the best deposits of ganister rock in Pennsylvania.

Portland, Ore., capitalists will organize a corporation to be known as the Rogue River Lime Company. They have taken over the limestone quarries belonging to the Grant's Pass Marble & Lime Company and will create a modern plant on the site of the quarry on Cheney Creek, twelve miles southwest from Grant's Pass.

The Shelbyville Lime Company has been incorporated at Calera, Ala. Capital \$5,000. Incorporators, G. R. Moore, Mrs. Ossie Moore, P. A. West.

The plant of the Washington Building & Lime Company at Bakerton, near Charleston, W. Va., was destroyed by fire on October 11, entailing a loss of \$20,000. The blaze started in a pile of cord wood.

The plant of the Washington Building & Lime Company, at Bakerton, West Virginia, was destroyed by fire October 11th, entailing a loss of over \$20,000. The plant was insured for \$20,000.

## PANA RETAILERS HOLD MEETING.

Pana, Ill., Oct. 21.—Local managers of the various yards of the O. H. Paddock Lumber Company met at the office of the home company here September 28 and discussed trade conditions. Those present were: A. L. Blythe of Windsor, O. J. Hanson of Coffeen, Charles Tomlinson of Morrisonville, Arthur Pryce of Edinburg, Fred Kellogg of Assumption, J. F. O'Donnell of Ohlman, J. A. Combes of Findlay. The officers of this company are: O. H. Paddock, president; R. T. Paddock, vice-president; Jos. W. Paddock, secretary-treasurer.

## GAS PRODUCER OPERATION.

### Decision in Massachusetts Federal Court Upholds Validity of the Doherty Patents.

Judge Brown of the United States Circuit Court of Massachusetts, has recently handed down an important decision in favor of the complainant in the case of the Combustion Utilities Corporation vs. Worcester Gas Light Company.

Something over three years ago the Doherty patents were infringed by a prominent builder of gas benches for the Worcester Gas Light Company of Worcester, Mass.

Suit was at once brought against the gas company by the Combustion Utilities Corporation, as owners of the Doherty patents. The decision fully upholds the validity of the patents, and finds that all the claims in suit were infringed. This suit has been a long and strongly contested one, commanding the best legal talent, and bringing out many points of law and principles of combustion engineering which lends to it a special interest. The niceties of the distinctions can only be understood by a more or less general knowledge of the questions involved.

Stripped of technicalities the object of a gas producer is to secure a partial combustion of the fuel in the producer, resulting in the production of combustible gases which are burned for some purpose external to the producer. In this partial or primary combustion of the fuel there is liberated in the producer an amount of heat in excess of that which can be carried away by the evolved gases. The result in an ordinary producer is that the temperature within the fuel bed is so excessive a large portion of the ash intermingled with the fuel is melted or fused into a hard clinker, which materially interferes with the draft and prevents efficient operation of the producer.

In an attempt to eliminate the formation of clinkers it has been the universal practice to use either steam or water beneath the grate bars of the producer, it being understood that if water is used it is for the purpose of generating steam, which passes up through the fuel bed and there has a restraining influence on the temperature.

The use of water or water vapor to restrain the rise of temperature throughout the bed of incandescent fuel is uneconomical and objectionable because there is a loss of heat due to the fact that as water must be heated and evaporated from about 60° F. to steam at a temperature at which the waste gases, or products of combustion, ordinarily leave the furnace stack and pass into the atmosphere,

To give a practical demonstration in aid of the good roads movement in the South, the Southern Railway has put on a special train with especially equipped cars to show the people of the Piedmont section and the Shenandoah valley, in Virginia, how to build roads and how to keep them in repair. This train started out on May 1, giving demonstrations in Alabama, Mississippi, Tennessee and North Carolina. It is now in the midst of a month's work in Virginia.





The Bluff Brick & Tile Company has been incorporated at Memphis, Tenn. Capital stock \$40,000. Incorporators, P. J. Lunati, J. H. Bassi, C. J. Cassarett, H. E. Houglass and B. E. Moses.

The West Salem Hollow Brick & Tile Company, of West Salem, Ill., has accepted a forty-acre farm owned by J. G. Michael, northwest of West Salem, and the company's new drain tile plant will be erected upon it.

The Georgia Brick Company is the name of a new concern at Tifton, Ga., capitalized at \$40,000.00 by R. C. Postell, H. J. White and others. Some fine clay deposits have been purchased by the company and a plant will shortly be built.

The Bronx Unit Brick & Tile Company, of Manhattan, has been incorporated to manufacture bricks, tile, pottery, etc., with a capital stock of \$50,000. The incorporators are E. Atkinson, J. B. Pruyn and L. Kent, all of New York City.

The Plasteron Dry Wall Block & Terra Cotta Company, of Burlington, N. J., has been incorporated with a capital stock of \$125,000, to manufacture terra cotta hollow building blocks, brick and other clay products. The incorporators are G. C. Gunn and L. S. Gunn, of Burlington, and N. Morton, of Florence.

General Engineer W. C. Kirkpatrick has reported to the stockholders of the National Sewer Pipe & Tile Company, of Webster City, Iowa, that the construction of the plant will cost \$197,880. The company which is authorized to have a capital stock of \$250,000 has elected the following officers: J. L. Kamrar, president; H. R. Dodge, vice president; P. W. Hearn, secretary; L. A. McMurray, treasurer. Board of Directors, K. Kamrar, H. R. Dodge, P. W. Hearn, L. E. Crowter, J. W. Hittle, W. J. Zitterell, W. A. Johnson, J. L. Peterson and A. O. McConnell.

The Albion Shale Brick Company, of Albion, Ill., has a contract with Harvey Haigh for plans and supervision of construction for a Haigh continuous kiln 408 feet long, 86 feet wide and 20 feet to the eaves. It will contain one continuous chamber, 816 feet long, lined with fire brick for burning brick. In the interior the product will be handled by an electric trolley. The L. E. Rodgers Engineering Company, of Chicago, has been given the contract for the erection of all necessary buildings, including a 20-tunnel waste heat drier. Operation of the plant this fall and winter is contemplated. This plant is to have a maximum output of 100,000 paving blocks per day.

#### ILLINOIS CLAY NEWS.

Springfield, Ill., August 21.—The Curtis Brick Company, of Grant Park, has been incorporated with capital stock of \$500,000 to deal in brick, tile, terra cotta, etc. The incorporators are Ernest B. Griffin, Vernon S. Curtis and Edward C. Curtis. Wright & Hutchinson have assumed charge of the Tilbury tile and brick plant at Delavan, which has been closed since the death of Mr. Tilbury, and will operate it. William Wright and James Hutchinson, the members of the firm who recently came from Edinburgh, Scotland, are experienced brick and tile makers, coming from families brought up in those lines.

The Commercial Club of Harrisburg has appointed a committee consisting of Harry Taylor, C. D. Stilwell and C. V. Parker to investigate the feasibility of brick roads. In company with the highway commissioners and possibly an engineer they will make a tour of Indiana and Illinois.

C. B. Hawley, of Morocco, Ind., has purchased the brick and tile industry of W. O. Gourley at Paxton.

The voters of Danville township, near Danville, will have an opportunity next April to vote upon a proposition to pave three miles of the Georgetown road with brick. The estimated cost is \$20,000.

Brannon & Parken, of Carmi, have begun the sale of stock for a vitrified clay plant at Grayville. The new company will manufacture the blocks for its own buildings and expects to start construction work within a short time.

#### PENNSYLVANIA CLAY PRODUCTS CO.

The above photograph shows the new plant of the Pennsylvania Clay Products Company, one of the live new Pennsylvania organizations. The company has recently been incorporated with a capital of \$100,000. Its president, Frank Oberkirk, was for years connected with the St. Mary's Sewer Pipe Co. of St. Mary's, Pa. Frank Hartford, a veteran sewer pipe man of Toronto, O., is vice president, and Walter K. Hood of Pittsburg is secretary. The company has bought the plant formerly used by the Duquesne Fire Proofing Co. and located at West Winfield, Butler County, Pa., on the P. R. R. The plant is being rebuilt and equipped with two new sewer pipe presses, and will be in full operating order about Dec. 1. The company owns 300 acres of fine clay, having three veins, none of which has been worked. It also has three veins of Freeport and Kittanning coal, all drift mine, which will give it a remarkably cheap fuel supply. It will employ from 80 to 100 men, and is shaping up a very aggressive business campaign.

The Dillsburg, Pa., Brick and Tile Company is about to resume operations at its \$150,000 plant.

The Enamel Vitrified Brick Company, of Toledo, Ohio, has been incorporated with a capital of \$500,000 by J. J. Urschel, Wm. Urschel, Geo. C. Penney, Andrew Malinovsky and F. S. Smith.

The Co-operative Building Company, of Cleveland, Ohio, has made its bow with a capital of



SEWER PIPE PLANT OF PENNSYLVANIA CLAY PRODUCTS COMPANY AT WEST WINFIELD, PA.

\$10,000. P. J. Buhrow, Robert C. Morrison, W. B. Campbell, M. Jenkins and T. B. Bolton are the incorporators.

A certificate of change of name has been filed at the State Department in Dover, Del., for the Stone Products Company of Sandy Lake, Pa., to the Sandy Lake Company, and increase in capital from \$25,000 to \$50,000.

For the purpose of securing building rock for shipment a large quarry will be opened by the Harbison-Walker Refractories Company at Polecat Creek, a few miles south of Anniston, Ala. J. W. Stump and Walter Thompson, Anniston representatives of the Harbison-Walker Refractories Company, have secured a lease on the lands.

The Renova Fire Brick & Clay Manufacturing Company, Renova, Pa., obtained a charter under Pennsylvania state laws July 25. Capital \$220,000.

#### WINSTON BROTHERS LOW-BIDDERS.

The Chicago Sanitary District opened bids October 5 for work on the Calumet Sag Channel Canal. The bids were for the removal of 221,000 cubic yards of glacial drift, 351,000 yards of rock excavation, 313,000 square feet of channeling, 3,200 cubic yards of concrete retaining wall, 1,100 yards of dry rubble wall. Winston Brothers, of Minneapolis, were the lowest bidders, their figures being 22 cents a yard for the glacial drift, 65 cents a yard for the rock excavation, 20 cents a foot for the channeling, \$7.00 a yard for the concrete retaining wall, and \$3.00 a yard for the rubble wall.

D. W. Ohern, professor of geology at the University of Oklahoma, has been appointed director of the Oklahoma Geological Survey to succeed Charles N. Gould, who has resigned to enter private work. The survey is at work on the oil, lead and zinc, granite and iron resources of the state, and separate reports will be issued on each of these products in the near future.



J. L. Anderson of Winnipeg, Manitoba, Canada, after years of experiment has produced a composition which is supposed to take the place of plaster.

The Monahan Plastering Company has been incorporated at Mobile, Ala. Capital stock \$2,000. Incorporators, John D. Monahan, John D. Monahan, Jr., and J. R. Ennis.

J. T. Phillips of West Beatrice, Neb., has been awarded the contract for plastering the new Presbyterian Church at Hastings, and also the new court house at Broken Bow.

The Etna Cement and Plaster Company has been incorporated in Los Angeles with a capital stock of \$200,000. T. Mahoney, E. Sharp, H. B. Mills, G. W. Gooch and D. Straus are the incorporators.

Gypsum has been found about 580 feet below the city of Centerville, Iowa. An analysis by Prof. Boyer, of Ames, pronounces it 98 per cent pure. A company will be organized to utilize the deposit.

#### READS IT WITH PLEASURE.

Frank D. Geraghty, president of the Piedmont Plaster Company, of Atlanta, Ga., says in a recent letter that his company has sold more plaster in the past month than their predecessors, the Georgia Wood Fibre Plaster Company, sold in four months. He says he reads with the greatest pleasure each month ROCK PRODUCTS and learns what his brethren of the trade in other parts of the country are doing.

#### LARGE DEPOSIT OF GYPSUM FOUND.

Austin, Texas, Oct. 14.—Advices have been received here of the discovery of a large deposit of pure gypsum and gypsite in Reeves county, in the western part of the state. Tests were made of samples of the material by C. W. Rottke, secretary and manager of the Texas Mica Company, and he pronounces it of high quality. The deposit covers a large area of ground, and is convenient to railroad transportation, it is stated. Steps will be taken immediately toward the development of the property.

#### LOUISVILLE PLASTER NEWS.

Louisville, Ky., Oct. 15.—Kentucky wall plaster men have had a big inning during the past few weeks, for numerous important structures which have been in course of construction for weeks have reached the plaster stage. The plaster trade is alive to every opportunity and the more important operators are putting forth daily advertisements in the newspapers exploiting the advantages of their products, so that if competition is the life of the situation the bluegrass field should be exceptionally energetic.

The Kentucky Wall Plaster Company, having finished the interior work upon the 8-story, \$250,000 Tyler hotel, has turned its attention to smaller jobs and is doing fine business.

B. J. Campbell, of the Kentucky Wall Plaster Company and one of the best-known figures in the Louisville plaster trade, is figuring prominently in Gateway City politics these days.

The Atlas Wall Plaster Company, peculiarly adapted to handling West End residential work because of its location, at 30th street and Greenwood avenue, is doing fine business along general lines. It is probable that a new mixer or two will be installed in the plant during the midwinter off-season to accommodate expanded demand in the spring, which is essentially a home-building season.

"We are handling all the business that the capacity of the plant will admit and the outlook is exceptionally bright in every respect," was the satisfying report of the Southern Wall Plaster Company. The Southern concern is now working upon a \$5,000 job at the Bland and Morgan street school, one of the newest and most approved institutions in the Louisville public school system. The company has also commenced work upon the plastering of the recently constructed addition to St. Mary and Elizabeth Hospital, 12th street and Magnolia avenue.

P. J. Daily, Jr., of the Southern Wall Plaster Company, is in Frankfort, Ky., superintending work which is being done by his company upon the handsome new residence of a prominent state official at the Bluegrass capital.

# STATISTICS OF GYPSUM INDUSTRY, 1910

The importance and growth of the gypsum industry in the United States is shown by figures compiled by Ernest F. Burchard of the United States Geological Survey.

According to an advance chapter by Mr. Burchard, from "Mineral Resources, 1910," the quantity of gypsum mined in 1910 was 2,375,394 short tons, an increase of 5.4 percent over the production of 1909, which was 2,252,785 short tons. The value of gypsum products in 1910 was \$6,514,478, compared with \$5,906,738 in 1909, an increase of \$607,740, or 10.3 percent. The quantity of gypsum sold without calcining was 419,931 tons, valued at \$667,599, in 1910, compared with 341,855 tons, valued at \$552,509, in 1909, and the quantity sold as calcined plaster in 1910 was 1,582,186 tons, valued at \$5,846,879, compared with 1,514,037 tons, valued

at \$5,354,229, in 1909. The value of gypsum and gypsum products imported in 1910 was \$502,111, compared with \$425,137 in 1909.

The largest value of output was reported from New York, Iowa and Michigan occupying second and third places, respectively. New York enjoyed the greatest share of the increase in production of gypsum in 1910, the total value of her output having been \$1,153,977, compared with \$1,032,650 in 1909. Iowa produced \$943,849 worth of gypsum products in 1910 and Michigan produced \$668,201 worth.

## Has Variety of Uses.

The bulk of the gypsum produced was manufactured by grinding and partial or complete calcination into the various plasters, such as plaster

of Paris, molding and casting plaster, stucco, cement plaster, fibered plaster, plaster boards, flooring plaster, and hard-finish plaster. The most prominent hard-finish, anhydrous plaster is Keene's cement, which makes a very white and very hard plaster. It is used as a backing and surface for artificial marble and for ornamental moldings and castings, and its use as a wall plaster is increasing. Refined grades of plaster are used in dental work, also as cement for plate glass during grinding, for making pottery molds, stereotype molds, and molds for rubber stamps, and as ingredient in various patent cements. A large quantity of gypsum is used in the raw state as a retarder in Portland cement. Considerable quantities are ground without burning and used as land plaster or fertilizer. Smaller quantities are used unburned in the manu-

Production of gypsum in the United States in 1909 and 1910, by States and uses, in short tons.

1909.

State.	Number of mills reporting.	Total mined.	Sold without calcining.				Sold as calcined plaster.				Total value.
			Ground for land plaster.		For Portland cement, paint, bedding plate glass, and other purposes.		Quantity.	Value.			
			Quantity.	Value.	Quantity.	Value.					
Alaska, Arizona, Colorado, Montana, New Mexico, South Dakota, and Utah.....	15	191,845	116	\$782	3,411	\$14,400	126,563	\$544,605		\$550,787	
California, Nevada, and Oregon.....	11	133,042	5,824	19,479	24,654	44,727	78,977	487,421		551,637	
Iowa.....	6	319,577	9,676	14,633	8,432	11,466	188,359	629,503		655,602	
Kansas.....	7	137,697	5,210	10,470	34,891	36,664	78,546	274,787		321,921	
Michigan.....	8	394,907	11,890	18,772	45,781	60,186	344,171	1,134,389		1,213,347	
New York.....	12	403,929	8,950	21,505	138,515	214,410	218,159	796,735		1,032,650	
Ohio and Virginia.....	4	299,517	7,906	18,054	20,628	49,263	185,591	600,631		667,948	
Oklahoma and Texas.....	13	338,526	(b)	(b)	15,942	17,098	256,338	753,439		771,137	
Wyoming.....	3	43,745					35,303	132,719		132,719	
	79	2,252,785	49,581	103,695	292,274	448,814	1,514,037	5,354,229		5,906,738	

\* Includes Oklahoma.

\* Included in Kansas.

3

Production of gypsum in the United States in 1909 and 1910, by States and uses, in short tons—Continued.

1910.

State.	Number of mills reporting.	Total mined.	Sold without calcining.				Sold as calcined plaster.				Total value.
			Ground for land plaster.		For Portland cement, paint, bedding plate glass, and other purposes.		Quantity.	Value.	Quantity.	Value.	
			Quantity.	Value.	Quantity.	Value.					
Alaska, Arizona, Montana, New Mexico, South Dakota, and Wyoming.....	10	207,417	280	\$1,069	15,755	\$36,578	120,415	\$608,154			\$645,741
California.....	8	45,901	4,900	14,185	17,318	46,090	31,824	181,928			242,203
Colorado.....	4	45,820	(a)	(a)	(a)	(a)	37,062	118,809			118,809
Iowa.....	6	322,713	6,139	8,312	30,532	38,683	230,932	886,854			943,849
Kansas.....	7	135,088	3,751	7,223	41,859	49,971	75,445	320,028			377,222
Michigan.....	8	357,174	7,007	9,900	57,460	78,478	240,905	579,823			668,201
Nevada and Oregon.....	5	103,329	4,410	9,322	(a)	(a)	86,123	443,506			452,918
New York.....	13	467,339	12,494	25,462	160,656	240,148	248,862	888,367			1,153,977
Ohio and Virginia.....	10	292,887	10,479	24,071	19,292	37,767	226,516	739,375			821,213
Oklahoma.....	10	162,788	(c)	(c)	(c)	(c)	116,968	442,191			442,191
Texas.....	3	188,559	(e)	(e)	10,924	13,896	135,801	485,160			941,256
Utah.....	4	46,279	4,185	10,841	412,301	15,663	31,333	122,585			149,089
	81	2,375,394	53,815	110,325	366,116	557,274	1,582,186	5,846,879			6,514,478

\* Included in Utah.

\* Includes Oklahoma and Texas.

\* Included in Kansas.

\* Includes Colorado, Nevada, and Oregon.

Gypsum imported and entered for consumption in the United States, 1906-1910, in short tons.

Year.	Ground or calcined.		Unground.		Value of manufactured plaster of Paris.	Total value.
	Quantity.	Value.	Quantity.	Value.		
1906.....	3,857	\$22,821	436,999	\$464,725	\$21,183	\$508,729
1907.....	1,979	12,825	453,911	486,205	36,628	535,658
1908.....	1,999	12,825	300,158	314,545	26,783	354,403
1909.....	3,437	21,790	350,160	376,790	30,548	425,137
1910.....	2,414	15,072	415,321	444,283	42,776	\$602,111

Production of gypsum in the United States, 1906-1910, classified as to uses.

Year.	Sold without calcining.					
	Ground for land plaster.			For Portland cement, paint, bedding plate glass, and other purposes.		
	Quantity, in short tons.	Value.	Average price per ton.	Quantity, in short tons.	Value.	Average price per ton.
1906.....	62,671	\$157,292	\$2.50	186,999	\$460,545	\$2.46
1907.....	46,851	115,841	2.47	232,546	424,227	1.82
1908.....	37,672	91,623	2.43	209,031	334,000	1.60
1909.....	49,581	103,695	2.09	292,274	448,814	1.54
1910.....	53,815	110,325	2.05	306,116	557,274	1.82

Year.	Sold as calcined plaster.			Total value.
	Quantity. in short tons.	Value.	Average price per ton.	
1906.....	999,561	\$3,220,138	\$3.56	\$3,837,975
1907.....	1,125,301	4,402,196	3.91	4,942,264
1908.....	1,125,617	3,650,192	3.24	4,075,824
1909.....	1,514,037	5,354,229	3.54	5,906,738
1910.....	1,582,186	5,846,879	3.70	6,514,478

Analyses of gypsum and gypsite.

	Silica (SiO <sub>2</sub> ).	Alumina (Al <sub>2</sub> O <sub>3</sub> ) and iron oxide (Fe <sub>2</sub> O <sub>3</sub> ).	Lime carbonate (CaCO <sub>3</sub> ).	Magnesium carbonate (MgCO <sub>3</sub> ).	Lime sulphate (CaSO <sub>4</sub> ).	Water (H <sub>2</sub> O).
1.....	0.40	0.19	0.25	0.35	78.10	20.36
2.....	.05	.08		.11	78.51	20.96
3.....	.68	.16	Not det.	Not det.	78.08	20.14
4.....	.10	.70			79.26	19.40
5.....	.10	.10			78.55	20.94
6.....	.11		1.07		78.42	20.42
7.....	3.62	.45	4.09	.34	71.94	19.87
8.....	9.73	.78	4.32	Trace.	68.29	16.88

1. Gypsum from Blue Rapids, Kans.
2. Gypsum from Alabaster, Mich.
3. Gypsum from near Sandusky, Ohio.
4. Gypsum from Saltville, Va.
5. Gypsum from Hillsboro, New Brunswick.
6. Gypsum from Baddeck Bay, Nova Scotia.
7. Gypsite from Gypsum City, Kans.
8. Gypsite from Salina, Kans.

Disposition of gypsum in the United States, 1909-10, by uses, in short tons.

	1909		1910	
	Quantity.	Value.	Quantity.	Value.
Sold crude:				
For Portland cement.....	290,433	\$402,830	332,917	\$520,795
For paint material.....	(a)	1,297	(a)	2,386
For plaster material.....	29,784	44,323	(a)	(a)
As land plaster.....	49,581	103,695	53,815	110,325
For other purposes.....	42,037	1,661	31,092	34,093
Sold calcined:				
For dental plaster.....	2,728	73,600	115	805
As plaster of Paris, wall plaster, Keene's cement, etc.,	41,438,706	5,070,334	41,483,046	5,999,353
To glass factories.....	13,860	35,208	15,943	29,185
For Portland cement and other purposes.....	58,734	175,087	83,082	217,536
	1,855,892	5,906,738	2,002,117	6,514,478

\* Included in "For other purposes."

\* Includes some paint material.

\* Includes some plaster material.

\* Includes some dental plaster and other gypsum products.



facture of crayons, paper, imitation meerschaum and ivory, calcimines, water paints and tints, and dry colors, notably Venetian reds. When used in excess in mixed paints gypsum is regarded as an adulterant. The unburned and dead-burned forms of gypsum may be used to a certain extent with oil paints, because they are not very active chemically. The partly dehydrated form is not suitable for use in oil, but can be used with water.

Gypsum was produced in 16 States and 2 Territories besides Alaska, and the total number of mills reported in 1910 was 80, compared with 79 in 1909. This includes mills that ground land plaster as well as those that calcined wall plaster.

#### Ample Capacity of Plants.

A summary of the equipment of plaster plants shows that 65 plants equipped with calcining kettles were in operation in 1910, besides 2 plants equipped with rotary kilns, and 3 plants manufacturing Keene's cement. In all 190 kettles were reported, ranging generally from 8 to 10 feet in diameter, and the maximum daily capacity was reported at 13,300 tons, or an average of 70 tons per kettle. This is more than two and one-third times the actual output of plaster. At 51 plants rock gypsum alone was used, and at 11 plants gypsite alone was used, while at 8 plants both rock gypsum and gypsite constituted the raw materials. Gypsum for 40 plants was obtained from open quarries, for 27 plants it was obtained from mines, and at 3 places combination quarries and mines were worked. At 55 plants coal was used as fuel, 13 used oil, and 2 plants reported the use of wood.

#### Wide Distribution of Gypsum Deposits.

East of Mississippi river the producing localities are confined to areas in Michigan, northern Ohio, central and western New York, and southwestern Virginia. West of the Mississippi deposits of gypsum are both numerous and widely distributed. The material is mined in Alaska and in 15 western states, as follows: Arizona, California, Colorado, Idaho, Iowa, Kansas, Montana, Nevada, New Mexico, Oklahoma, Oregon, South Dakota, Texas, Utah, and Wyoming. Plaster mills are in operation in at least 14 of these states. The Alaska gypsum is shipped to Tacoma, Wash., where it is prepared for the market.

The gypsum which is imported into the United States comes, except a few hundred tons annually from France and Great Britain, almost wholly from Nova Scotia and New Brunswick, entering the ports of the New England and North Atlantic states. This imported gypsum is nearly all calcined and converted into wall plaster by plants along the seaboard, although a small quantity is used crude as land plaster and in paints and patent fertilizers.

#### Trade and Manufacturing Conditions.

Most of the gypsum producers reported that trade during 1910 was either as good as or better than in 1909. A few firms reported greatly increased trade, and a few reported that trade was not so good. The points where trade was not so good were principally in localities where competition is becoming acute. Prices in some localities were considered low, notwithstanding the satisfactory showing made in the average for the whole country.

The close of 1910 showed 80 mills operated in that year making either wall plaster or land plaster, or both, as compared with 79 in 1909. One new plant began operation in 1910 at Sigurd, Utah, as a producer of Keene's cement, and at the close of the year 6 new plants destined to produce wall plasters were under construction.

A summary of the equipment of plaster plants shows that there were 65 plants equipped with calcining kettles in operation in 1910, besides 2 plants equipped with rotary kilns, and 3 plants manufacturing Keene's cement. In all there were reported 190 kettles, ranging generally from 8 to 10 feet in diameter, and the total daily capacity was reported at 13,300 tons, or an average of 70 tons per kettle. This is more than two and one-third times the actual output of plaster. At 51 plants rock gypsum alone was used, and at 11 plants gypsite alone was used, while at 8 plants both rock gypsum and gypsite constituted the raw materials. The supply of gypsum for 40 plants was obtained from open quarries, in 27 places it was obtained from mines, and at 3 places combination quarries and mines were worked. At 55 of the plants coal was used as fuel, 13 used oil, and 2 plants reported the use of wood.

Mr. Burchard's report, which contains a map showing the location of gypsum plants in operation in 1910, may be obtained free of charge from the Director, U. S. Geological Survey, Washington, D. C.

## SAND AND GRAVEL

### SAND AND GRAVEL MEN TO ORGANIZE.

A movement is on foot to organize the sand and gravel interests. This has been spoken of from time to time in various parts of the country, but up till now there did not seem to be any concerted action. There is no question that such an association, if founded on broad lines, would prove of inestimable benefit to the industry as a whole.

It has been suggested that a meeting be held in Chicago in the near future at which plans for such an association can be talked over and a tentative organization formed. Aside from the fact that such an association would be valuable from a mutual protection standpoint, there are many problems which confront the industry which can be successfully handled only by concerted action.

Despite the diversified interests of the sand and gravel business, they have much in common and an exchange of ideas and experiences could not but result in mutual benefit to all in the industry.

The sand and gravel business has been growing by leaps and bounds with the introduction of better methods of securing the material and handling the same. Much improvement in late years has been made in the washing and screening of the material. The future of the industry is indeed bright and an organization will do much to promote the best interests of the industry.

The Stockton Gravel Company has been incorporated at Stockton, Cal., with a capital stock of \$16,000, by J. W. Dockendorff, L. P. Haney, Jos. Berejer, J. F. Davidson and A. W. Stowell.

The Holly Sand Company has been incorporated at Sutton, W. Va. Capital stock \$10,000. Incorporators, John D. Sutton, R. M. Cavendish, O. O. Sutton of Sutton, D. J. Fury of Balmer, Alexander Parks of Martinsburg.

Ford & Malott of San Francisco are preparing to install a gravel-handling plant, with screens and cleaning apparatus, in Niles Canyon, near Niles, Cal. Their primary object is to get material for their own use in roofing work, but they will also probably have some material for the market.

The Mississippi Sand & Gravel Company of Keithsburg, Ill., have had a splendid year. In the busiest part of their season they averaged fifteen cars a week. G. A. Begeman, the secretary and treasurer of the company, says that next season they will install screening sheds and other equipment and double their capacity.

The Beloit Sand & Gravel Company has been incorporated at Beloit, Wis., with a capital stock of \$20,000. Officers have been elected as follows: President, G. W. Byers; vice-president, F. G. Hobart; secretary-treasurer, J. A. Janvrin. The company controls forty acres north of Beloit and is preparing to begin operations this fall.

The Carrollton Sand & Gravel Company, of Carrollton, Ky., one of the best-known concerns in that section of the state, recently filed a complaint with the State Railroad Commission at Frankfort, Ky., alleging that present freight rates charged by the Louisville & Nashville Railroad Company upon sand shipments from Carrollton to Latonia and Covington, Ky., in the extreme eastern portion of the state, were excessive. After investigation of the matter the Commission decided in favor of the sand company and the L. & N. was ordered to put a lower rate into effect.

The Hillman Sand Company was incorporated last week at Limestone, Ky., with a capitalization of \$10,000, to engage in a general sand business. The company has equipped an up-to-date plant for dredging and proposes to develop the resources of about 80 acres of fine sand bars near Limestone. The daily capacity of the plant has reached 75 tons although it is a comparatively new concern and the officers of the company are planning the installation of a crusher with daily capacity of 200 tons of silica sand. The officers of the new Limestone company are H. W. Hillman, president and general manager, and C. H. Norton, secretary and treasurer.

### SAND AND STONE DRYER OUTFIT.

It is generally recognized that few if any surfaces are better for a street or road than asphalt, but too often is the fact forgotten that to secure the best possible results there must be a perfect bond of the sand or stone mixed with the asphalt and that this perfect bond can only be obtained with dry and heated aggregates. When the sand or stone is wet or cold and is mixed with the asphalt the bond is weak and a good road is out of the question.

A survey of the machines which have been made for drying and heating sand or stone shows that a remarkable development has been made in the last few years. Previously it has been a question of the capability of the dryer to perform the work, and no attention was given to the question of efficiency and economy. Formerly, the single shell dryer, though comparatively cheap in first cost, was used extensively, but its inefficiency caused by losses, such as radiation from the hot shell, imperfect combustion, etc., has forced it to give way to the double shell dryer of the Ruggles-Coles type. In this dryer there is a minimum loss of heat by radiation as the gases pass through the inner shell then back through the space between, resulting in the surface of the outer shell never being more than 100° F. Perfect combustion is obtained because the gases pass over double the length they do in a single shell dryer and consequently time is given for the gases to combine with the oxygen of the air.

Of interest in this connection is the test made on a Ruggles-Coles dryer, used by a large asphalt paving company for drying and heating sand or stone. In this case the sand or stone was not only dried, but raised to 404° F., so that when it was mixed with the melted asphalt it would not chill the same and a perfect bond could be obtained. From the tabulated result of this test it will be noted that this Ruggles-Coles dryer showed an efficiency of 78.3 per cent.

#### Test on Ruggles-Coles Dryer at Asphalt Paving Company's Plant.

Calorific value of fuel used.....	12,500
Fuel consumed per hour—pounds.....	505
Amount of moisture in material—per cent.....	4.5
Water evaporated per hour—pounds.....	1,797
Water evaporated per pound fuel—pounds.....	3.56
Material dried per hour—pounds.....	38,136
Fuel per ton dried material—pounds.....	26.4
Heat lost in exhaust air—per cent.....	13.3
Heat lost by radiation—per cent.....	8.4
Heat used to evaporate water—per cent.....	32.4
Heat used to raise temperature of material—per cent.....	45.9
Total efficiency—per cent.....	78.3

\* Material heated to 404° F. to mix with melted asphalt.

The general arrangement of this plant is that either sand or rock is fed to the dryer by a bucket elevator and then taken by a second bucket elevator, also clearly shown in cut, to an overhead bin. As required, it is drawn from this bin into a mixer where melted asphalt is mixed with it. From the mixer it is discharged into wagons and hauled to the job. This single double-shell dryer is reported to have replaced four single shell dryers which could not do the work, and the fuel consumption is about one-half that used in four single-shell dryers, while the capacity has been increased 50 per cent. In the test made when this outfit was drying sand the work done by the dryer is considered as not only drying, but heating the sand to 404° F.

### PITTSBURGH SAND AND GRAVEL NEWS.

Pittsburgh, Pa., Oct. 15.—Most of the sand companies are busier than they have been for several months. The big project of raising Federal street on the North Side and three immense similar projects on the South Side are taking an enormous quantity of sand and gravel. In addition to this the recent floods caused a loss of \$2,000,000, and damaged the dams on the three local rivers and railroad and street railway properties in the Pittsburgh district. Building sand is not a good seller, and quick deliveries are asked on the orders which are received.

The National Sand & Gravel Co. has two diggers working on the Allegheny River and is encouraged over the general outlook. Its business during September was fair and shipments are increasing slowly.

The Juniata Sand Co. has been organized by Ambrose Persing, Frank E. Weaver and W. G. Savidge, of Sunbury, Pa. It will dig dredge and mining sand.

Walter Hostetler, of the Beach City Silica Sand Co., at Dundee, Ohio, announces that all the sand plants at that place are running full and that prospects for fall trade are improving.

The Deckers Creek Sand & Stone Co. which is located at Sturgis, W. Va., is being increased by about one-fourth capacity. It is now working about fifteen more men, and is adding daily to the amount of its products held in storage. The company makes an excellent grade of glass sand and has been very busy most of the time during the past two years.

The Keystone Sand & Supply Co. of Pittsburgh is fairly busy. It has one digger working and has an excellent contract for sand to be used for the new dam at New Martinsville, W. Va., which is being built by the Dravo Contracting Co. of this city.

The Iron City Sand Co. has a big force at work digging the hauling sand for the raising of Federal street on the North Side and West Carson street on the South Side. It has two diggers working and one more which will be out of the repair shop this week. The company is supplying a big lot of coarse gravel for these street jobs in addition to same.

The Buckeye Sand Co. has moved its office from the Wabash building to 114 Ninth street. It is doing a very good business in foundry sand.

The Solly Sand Co. of Sutton, W. Va., has been organized with a capital of \$10,000 by John D. and O. O. Sutton, of that place, D. J. Fury of Palmer, W. Va., and Alexander Brooks of Martinsburg, W. Va. It will have a big trade throughout the Greater Pittsburgh district.

The Winfield Sand Co. announces that September was by far the best month that it has had this year. Its business in glass sand showed a marked improvement. The larger part of its shipments came to Pittsburgh. It is also going into the Eastern markets with a fine quality of sand for the plate glass companies. This company also sells builders' sand to every retailer in Pittsburgh with the exception of two, which gives it a splendid trade in that line here.

#### NEW YORK SAND AND GRAVEL NEWS.

New York, Oct. 17.—Conditions in the sand and gravel market have improved somewhat during the past month and dealers report a better demand for their products than was experienced last month. The majority of traders are of the opinion, however, that business conditions are not up to the general average of the fall months, which as a rule has been a busy season here during the past few years. Dealers are optimistic nevertheless and look for a better demand for sand and gravel during October and November.

Charles A. Fox, general manager of the Phoenix Sand & Gravel Company, had the following remarks to make concerning the sand and gravel trade. "There has not been any notable improvement in the local sand and gravel market during the past month and business was of a quiet character during the interval. We are now awaiting with interest the reports of the excavating for the Triborough subways and the Catskill deep water tube system. We look for a better demand for sand and gravel during the next month or two."

Joseph N. Ely of the Crescent Sand and Gravel Company, speaking of the conditions in the local sand and gravel trades, said: "We have been very busy and things are looking considerably brighter than they did last month. I am very glad to say that we are doing a bigger business this fall than we did this time a year ago. During the past three weeks we have kept our plant going to its full capacity. We are receiving 85 cents to \$1 a cubic yard for gravel and 35 cents a cubic yard for sand, alongside. The outlook is bright and according to inquiries and orders received we will be kept busy making deliveries during the next two months."

W. J. Timberman, general manager of the Goodwin Sand & Gravel Company, stated: "Conditions in the local sand and gravel trade are quiet and

no improvement was experienced during the past four weeks. We do not look for any immediate improvement in the situation, but expect a hand to mouth business for the balance of the year. Many of the projected operations that were held up are bound to materialize in the near future and we are of the opinion that we will do a good trade in the early spring. Prices for sand and gravel remain unchanged."

#### MODEL PLANT.

C. P. Lathrop & Co., of Richmond, Va. Have One of the Best Arranged Plants in the Country for Washing and Screening Sand.

C. P. Lathrop & Co., Richmond, Va., have a model sand and gravel washing plant that is one of the most up-to-date in the country. The process of securing and handling the material is most interesting.

The material is trapped over a 500 foot portable 22-inch belt conveyor. The company are using drag and wheel scrapers on account of some particular features, connected with the working of this particular acreage. They mine the material by a hydraulic process, and also a drag line excavator and steam shovel. The latter two propositions the company are now considering for installment during the winter season. They would be pleased to receive comment on these two suggestions from any manufacturers who are interested.

The material after being delivered on the portable belt conveyor is dropped over what the company calls a "grizzly." Everything under 2-inch drops through this "Grizzly" and everything above 2-inch is carried into a crusher, which breaks it into material of 2-inch and under. At the foot of this "Grizzly" is another conveyor of the same type as the portable conveyor, which is called the incline conveyor. The latter carries the material up to an elevation of 56 feet, where it is then put through the washing process, as follows: The first screen is a conical rotary screen with a 2 1/4-inch round perforation. After it passes this screen it is dropped into a 2-inch bin, where it is loaded by gravity into the cars. The other four screens are of the same type, the next size being all material that will pass a 3/4-inch and retained on a 1/2-inch perforation. The next size is a 3/32-inch by 1/2-inch slotted opening and retained on a 2/16-inch round perforation. Everything that passes this latter is dropped into a settling tank, which dumps it into the sand bin. These bins are so arranged that these cars are loaded by gravity. It is a process requiring less than two minutes to load up a fifty-ton car. It is also arranged so that any quantity of each can be mixed.

The tracks from the bins are on an incline and as soon as the cars are loaded they are released and move by gravity down on a spur, from which they are taken by the railroad company.

Operating as above, the company has gotten out as high as 1,200 cubic yards per day of this material. This is without forcing the plant at all.

The officers think, with the completed machinery mentioned before, that they can increase their output from 1,500 to 2,000 cubic yards per day.

Judge Foster of the United States Circuit Court of Louisiana has named J. O. O'Keefe as receiver for the Southern Gravel & Material Company of Brookhaven, Miss.

The Galveston Gravel Company has been incorporated at Galveston, Tex. Capital stock \$5,000. Incorporators, Sam Fridner, A. A. Goodwin, Dave S. Fridner, all of Galveston.

The Lestershire Sand & Gravel Company, Lestershire, Broome County, New York, has been incorporated to do a general contracting business. Capital \$10,000. Incorporators, Walter F. Carling, 937 Bloomfield street, Hoboken, N. J.; Alfonse Bivona, 325 E. 28th street, New York City, and Chas. M. Maxamer, 153 Grove street, Long Island City.

The White Sand Company has been incorporated at Bluefield, W. Va. Capital stock \$50,000. Officers are B. M. Cohen, president; D. J. Cohen, secretary and treasurer, and J. G. White of Oakvale, vice president. They will install a washer for the purpose of making the very best grades of sand.

The Commercial Sand & Gravel Company of Cleveland, Ohio, has been incorporated for \$30,000. Those interested are Robert H. Parkin, C. E. Scherbarth, C. O. Morton, H. M. Herman, Thomas Graves.

#### PROMINENT CONTRACTORS IN OSWEGO, N. Y.

J. A. Calkin established himself in the general contracting business in Oswego six years ago and has been very successful. He takes contracts for building dock work, sub-marine work, bridges, etc. He is now building what will be the principal bridge in Oswego when completed. It crosses the Oswego river on Bridge street, is 500 feet long, is a steel girder bridge, 64 feet wide with 40 foot roadway and two 12 foot walks. The bridge is carried on 6 piers of concrete construction. These piers rest on rock bottom river bed; one thickness of Jones & Laughlin sheet iron was used for cofferdam in filling with concrete. They were put in 12 feet of water last September, in a twenty mile current, when the Oswego had a greater volume of water and running higher than known in recent years. It was an exceptional feat of engineering under these circumstances and accomplished successfully. Another difficult piece of construction was that of the tail race for the Peoples Gas & Electric Company of Oswego. Mr. Calkins built a concrete wall backed by sunken cribs resting on wooden piles. Jones & Laughlin sheet iron piling was used for cofferdam, sunk about three sides of dock, effectively holding the strong current of the tail race in check, where an earth dam had failed utterly. This work was started the summer of 1910, but later abandoned by the contractors undertaking it, and relet to Mr. Calkins in August, 1911, and approaches successful and early completion.

Peter Roby is another prominent contractor in Oswego who does large contracting work for public and private buildings, churches and public improvements. His general offices are at 23 W. Cayuga street. He started contracting work 25 years ago. He erected the Catholic church, brick construction, in Fulton, N. Y.; the factory of the Oswego Candy Company, West Second and Utica streets, the foundation and first story of which are of concrete construction and the four upper stories of brick, with first floor of concrete; the Standard Spinning Company's storehouse on West First street near the New York Central Depot. This structure is four stories in height of brick and basement of concrete; he also built the New York Central Depot in Oswego, the foundations and floor in basement of which are of concrete; The Oswego Pumping Station, another imposing and striking structure in this city, the foundations of which are of concrete and reinforced concrete roof. He is now building new freight houses in Oswego for the New York, Ontario and Western Railway. He reports greater activity in building operations in Oswego than last year.



SAND AND GRAVEL PLANT OF C. P. LATHROP & COMPANY, RICHMOND, VA.



DRAG SCRAPERS.



BELT CONVEYOR.



# QUARRIES

## MONEY WITHOUT INTEREST.

The bank that fathers the idea will receive the lion's share of the additional money brought to the township by the use of limestone fertilizer, according to W. L. Duckles, cashier of the Citizens' State & Trust Company, of Edwardsville, whose offer to loan money without interest to farmers who will nourish their lands in this manner has created interest throughout Illinois.

Mr. Duckles himself owns a farm of 260 acres near Carlinville, in Macoupin county, and while the use of fertilizers on this is still an experiment, the results have been so great that he has become an advocate of limestone. Recently he attended the Illinois State Farmers' Institute at Urbana, taking with him his tenant. While there he met a number of Illinois farmers, who confessed they were interested in the fertilizer problem, but some were unable to finance it. Mr. Duckles asked the



BRADLEY LANE.



METHOD OF PLACING BITUMINOUS MACADAM.

best solution of this difficulty for the average farmer. Selling a portion of the farm to rebuild the remainder was one of the principal remedies offered, but most of the men gave evasive replies, and others shunned the money question altogether. The common idea of letting loose of part of the land did not appeal to Mr. Duckles and he evolved the plan which has made his bank notable in the state. His theory is that more fertile farms mean larger yields, larger yields mean more money, and more money will bring larger bank accounts.

It is too early to be sure that this theory is correct, but the inquiries at the bank show that this step likely will be profitable to both land owners, tenants and bankers. The sum of \$3,000 has been set aside for this purpose at the institution and the officials declare that the increased crop the first year should pay back the borrowed money and leave the farmers enough additional profit to continue the good work.

Of course, the money loaned must be with approved security, the interest only being waived. Limestone has been successfully used on the Duckles farm.

The American Road Builders' Association, with headquarters at 150 Nassau street, New York, has issued a neat little booklet telling of the purposes of the association. The society is working hard for a betterment of the roads of the United States. The booklet also contains the constitution and by-laws of the association. Copies of it may be had by addressing the secretary in New York.

## GOVERNMENT

**Experiments in Road Building and Treatment Now Being Carried on on An Extensive Scale at Chevy Chase, Md.—Tests Are to Be Absolutely Fair and Will Be Conclusive.**

Washington, D. C., Oct. 16.—The most interesting experiments in road building ever attempted in the vicinity of Washington are now in progress at Chevy Chase, Md. When these are finished the territory immediately over the District of Columbia line will have more diversified roads on one short route than have ever been placed in a similar area anywhere. The experiments are being conducted on Connecticut avenue, the most traveled thoroughfare in Chevy Chase. The purpose is to determine the best material for long and uniform wear, under any and all conditions of travel, and for that reason the Bureau of Public Roads is rebuilding Connecticut avenue in Chevy Chase. The progress of the work is being watched with interest, not only by the residents, but by the experts of the Department of Agriculture, who are trying to



AUTOMOBILE GOING AT MODERATE SPEED.



SHOWING AMOUNT OF DUST MADE BY AUTOMOBILE GOING 45 MILES AN HOUR.

Chevy Chase Circle will be the product of the Indian Refining Co.; then the oil of the United Gas Improvement Co., and then what is known as asphalt-oilene. A distance of 400 feet on each side of the avenue will be turned over to the Standard Oil Co. On 400 feet nearest to Bradley Lane will be the test of the oil made by the Texas Oil Co. In order to make the tests absolutely fair, the representatives of the various firms are permitted to place the road dressing on the avenue in their own way, either pour, spray, or sprinkle, as they consider best. Officials of the bureau of public roads realize that one of the great faults of road building is lack of care after first being built, and one advantage of the present experiments is that both sections of new roadway will be under the direct control of the Department officers. Thus it will be possible to keep up repairs, and test the systems thoroughly.

In a letter to the collector of customs at Niagara Falls, Assistant Secretary of the Treasury Curtis states that stone crushed by machinery and screened to size desired, is to be admitted free of duty under the tariff act of 1909, paragraph 626. The Auditor for the Treasury invited attention to two entries of stone at Niagara Falls, which were imported there to be used in making an abutment at the American end of the Michigan Central Railroad



PUTTING ON THE TOP DRESSING.



CLEANING BRADLEY LANE.

bridge. The Niagara Falls collector assessed duty upon the crushed stone under paragraph 480 of the tariff act at the rate of 20 per cent ad valorem, citing as authority the decision of the United States Court of Customs Appeals wherein it was held that certain granite or terrazzo was dutiable under that paragraph. Mr. Curtis advised the collector that in the opinion of the Department this decision has no application to crushed stone. The Department concurs in a decision of the Board of Appraisers at New York, February, 1904, where it was held that stone which had simply been crushed by machinery or otherwise was not a manufactured article, but was free of duty as a mineral crude or not advanced in value or condition by refining or grinding or by other process of manufacture. Mr. Curtis directs the Niagara Falls collector to admit free of duty as a crude mineral substance under paragraph 626 of the tariff act of August, 1909, future importations of crushed stone similar in character to that covered by the entries mentioned.

Sherman Eckley, commissioner of public works, is quoted as saying that he will demand the use of washed gravel on all street improvements in Peoria, natural gravel having been unsatisfactory.

George Mann has opened a gravel pit south of Rosville, Ill., and is doing a retail business.

If present plans are carried out, Port O'Connor, Texas, is to have a \$500,000 hotel. B. F. Yoakum, head of the Frisco lines, is said to be one of the leading spirits in the enterprise.

## PITTSBURGH QUARRY NEWS.

Pittsburgh, Pa., Oct. 18.—Most of the Western Pennsylvania quarries are working at nearly if not quite full capacity. September was one of the worst months of the year in the matter of weather and delayed shipments greatly. On this account operations are being hurried with all possible speed to get deliveries in before freezing weather starts. Recent floods have brought to these companies a large number of rush orders for emergency work, chiefly with the railroads.

The Beaver Valley Sand Stone Co., whose plant is at Wampum, north of Pittsburgh, has been working overtime lately turning out crushed stone for building purposes. Many of these orders also are for lime stone for culverts and trestles on the railroads and trolley lines which were lately washed out.

The Basic Products Co. at Huntington, W. Va., is having considerable machinery installed by the Allis-Chalmers Co. of Milwaukee, Wis. This will increase its output to about 125 tons per day of twenty-four hours. The cost of the equipment is about \$20,000. They are also installing the Kritzer system of hydrating lime.

The National Lime Stone Co. of Harrisburg, Pa., has just started work on its Edison Roll Crushing plant near Martinsburg, W. Va. The plant will have a capacity of 5,000 tons daily and the company is already coming into Pittsburgh for business.

The Shenango Lime Stone Co. has been formed at New Castle, Pa., and has applied for a Pennsylvania charter. George M. and M. J. Hosack of the Park building, Pittsburgh, are interested.

The Pittsburgh Limestone Co., which furnishes all the lime stone for the Lucy and Isabella furnaces of the Carnegie Steel Co. at Pittsburgh and also for its Duquesne, Pa., furnaces, is crowding operations at its plant at West Winfield, Butler County, Pa. It is working 150 men there and making heavy shipments.

The government opened bids Oct. 14 at Louisville, Ky., for constructing Lock No. 41 on the Ohio river. The principal items are: 876,000 cubic yards of common excavation, 293,000 cubic yards of rock excavation, 250,000 cubic yards of fill and 101,000 square feet of channeling. The Ohio River Construction Company was the lowest bidder, its figures being 35 cents a yard for the common excavation, 90 cents a yard for the rock excavation, 15 cents a yard for the fill, and 5 cents a foot for the channeling.

One of the most up to date, modern stone crushing plants has been erected by the Southern Bitulithic Company at Woodstock, Ala. This enterprise represents an investment of about \$100,000, and will be welcomed by all users of special sized stone throughout the South, as machinery has been installed for the special purpose of crushing, separating and delivering to contractors any particular size stone they may need. We understand the company will also make a specialty of furnishing riprap or rubble stone.

Headquarters of the Southern Bitulithic Company are located at No. 602 First National Bank Building, Nashville, Tenn.

Preston K. Yates, 30 Church street, New York City, reports that the Nyack Trap Rock Company has changed ownership, and that the new company intends to increase the size of the plant to obtain a capacity of 1,000 yards of stone a day. The plant is situated on the West Shore Railroad, twenty-five miles north of Jersey City.

Mr. Yates has been retained to design the new plant and superintend the erection of the same.

The city of Richmond, Va., has recently let a contract for the building of a concrete bridge at the site of the old Mayo bridge across the James river. There will be 18 arches, each of 71-foot span, and 16 piers. The total length will be 721 feet and the structure is designed to carry 15-ton electric cars, for which there will be double tracks. The cost will be \$224,734.

The Medford Concrete Company has been incorporated at Medford, N. J., with a capital stock of \$100,000. The company will engage in contracting and building and in the manufacture of concrete blocks. The incorporators are Samuel M. Hinchman, Frank A. Braddock and G. Albert Haines.

The Bergen Trap Rock Company, Jersey City, N. J., have been incorporated to do a general contracting business. Capital stock \$20,000. Incorporators, Wulter F. Carling, Alfonso Bivona and Chas. M. Maxner.

## RETAILERS ORGANIZE

## Association of National Scope, Including Material Men, Formed to Protest Against Unjust Legislation and Other Abuses.

The National Federation of Retail Merchants, representing 233,000 retail men in the United States, was organized at the La Salle hotel in Chicago at a convention held Oct. 18, 19 and 20. Thirty-five states were represented among the 233 delegates present.

The organization is one of far reaching importance, as its purpose is to safeguard the interests of retailers by fighting adverse legislation and by securing needed reforms through legislation.

In the convention the builders' supply and lumber interests were represented by a number of delegates. The Ohio Builders' Supply Association was on the floor with a good delegation, in which were Richard Kind, Toledo; W. T. Rossiter, Cleveland; F. P. Childs, New Lexington; D. K. Thompson, jr., Columbus, and W. W. Coney, Cincinnati.

Martin J. Maloney, president of the Detroit Retail Grocers' Association, was elected president, and T. Arthur Rector, of Wichita, Kan., secretary.

President Maloney, on taking the chair, said: "This is a great undertaking. Many great things have been started in the past, but when the best judgment and greatest sincerity were not given to them they fell. The necessity of protecting our own interest should be our uppermost thought. It is needless for us to come here if we do not accomplish something by coming. We are here for a purpose: that purpose must be accomplished. Many lines are represented here, but that makes it all the better. Our purpose is to perpetuate ourselves in the retail business. We can't do it by being easy, by letting them walk on us. We must show the courage of our convictions, and then we'll win. George W. Perkins said in a speech at Detroit that the day of the individual in business is past. What chance has the retailer if he goes up against that without organization? Adhering to our purpose, we must perfect an organization, and no one interest must control this institution."

## Resolutions Committee.

C. F. Sweet, Grand Rapids, Mich., of the resolutions committee, read the report of that committee, as follows:

WHEREAS, It is a fact that for convenience, service and economy to the consumers, merchandise must pass through retail channels of trade;

WHEREAS, It is a fact that the retail merchants have greater investments both in real estate and merchandise, give employment to more people, pay more taxes and insurance, and extend a helping hand to more people than any other class;

WHEREAS, It is a fact that the retail merchants have been charged by many to be responsible for the high cost of living, lied about by subsidized politicians and legislated against without any more reason than the unmerited feeling that legislation must be enacted; and,

WHEREAS, It is a fact that the elimination of the retail merchants, which would be the radical conclusion of the present attacking of this branch of trade, would mean the elimination of commercial and social life from the largest cities of our country; therefore, be it

Resolved, That the delegates assembled here deny and brand as false these charges which have been so maliciously made against us and pledge ourselves to vigorously promote a campaign of attention for the purpose of enlightening the public mind.

## Ask Press Cooperation.

WHEREAS, We recognize the desire of the press to disseminate truthful information to its readers; and

WHEREAS, We believe that the interests of the retail merchants and of the press are correlative; and

WHEREAS, We believe that the press generally has shown a desire to be impartial and fair to the retail merchants; and

WHEREAS, It is our desire that the public should be kept accurately informed of all of our acts, and it is our belief that this can be best accomplished from the medium of the press; therefore, be it

Resolved, That we do hereby request their special cooperation that the retail merchants may receive a square deal.

## Thank Trade Journals.

WHEREAS, We realize from past experience the great value of the cooperation of our trade journals in any of our undertakings; and

WHEREAS, We appreciate their desire to promote the best interests of the trade which they represent; therefore, be it

Resolved, That we do hereby express our thanks to the trade journals for their past services and endeavor to impress upon them the vital importance of our present undertaking, to urge their individual endorsement.

Resolved, That the thanks of this convention are hereby extended to Mr. M. J. Maloney for his able and impartial ruling over this convention and to Mr. Rector for his services as our secretary.

Resolved, That the thanks of this meeting are most heartily extended to Mr. Arthur L. Holmes for his work in connection with the calling, organization and success of this convention.

## Oppose Parcels Post.

WHEREAS, We believe that the agitation for the establishment of the parcels post from sources and influences of big corporations and not from any great demand by the farmer or other classes; and

WHEREAS, We believe that the establishment of the parcels post will result in a loss of business to the retail merchants without a profit to the consumer; therefore, be it

Resolved, That we unalterably oppose this proposed action on the part of the congress of the United States, as recommended by the president and the postmaster general; and be it further

Resolved, That a copy of this resolution be sent to the president of the United States, the postmaster general and the senators and representatives in congress.

## For Lower Express Rates.

WHEREAS, Rates of transportation charged by the various express companies are in many instances excessive; and

WHEREAS, A reduction of these rates to a reasonable basis would in a large measure satisfy any demand for a parcels post without increasing the federal postal deficit; therefore, be it

Resolved, That we hereby request the Interstate Commerce Commission to thoroughly investigate the express rates, with a view to accomplishing this double purpose.

## For One Cent Postage.

WHEREAS, The receipts of the postoffice department show an unreasonable profit to the government on first-class postage, and

WHEREAS, The retail merchants of this country are among the largest contributors to this "monopolistic" revenue; therefore, be it

Resolved, That we urge upon the proper authorities a reduction of first-class postage rates to 1 cent.

## Expenses of Federation.

WHEREAS, There have been incurred to date some expenses in connection with the formation of this federation; and

WHEREAS, The proper promotion of this work will necessitate further expenses before the action of this meeting can be ratified by associations in delegate attendance herein; and

WHEREAS, It is estimated that these expenses will be about \$5,000; therefore, be it

Resolved, That we subscribe at this time to make up this amount.

WHEREAS, The purposes for which this federation is organized are of a broad scope and looking toward the betterment of commercial conditions of this country; and

WHEREAS, Whatever is to be of interest to the retail merchants redounds to the advantage of national commerce; therefore, be it

Resolved, That we cordially invite the cooperation of all manufacturers, wholesalers and our friends, the traveling men in this community.

The report of the committee was adopted as a whole, as read.

## Report on Constitution.

The report of the committee on constitution was then read by Mr. Flynn, as follows:

Article 1—Name.—The name of this organization shall be the National Federation of Retail Merchants.

Article 2—Object.—Section 1. To safeguard and serve the interests of all retail merchants.

Section 2.—To oppose all unjust legislation inimical to retail merchants.

Section 3.—To promote all just legislation designed for the benefit of retail merchants.

Section 4.—To demonstrate the necessity of retail merchants to manufacturers, wholesalers and consumers of the United States.

Section 5.—To cooperate with all other organizations having for their objects the advancement of the best interests of commerce.

Article 3.—The membership shall be confined to retail merchants doing business in the United States, who are affiliated with their state or inter-state association, and where a national association exists, with their national association, and who are willing to conform to the constitution and bylaws of this organization, and such honorary memberships as may hereafter be provided by the board of directors.

Article 4.—Section 1.—The officers of this organization shall consist of a president, vice president and treasurer, and the board of directors, consisting of one representative from each line of trade represented.

Section 2.—The board of directors will elect an executive committee of seven members from their body, of whom the president, vice president and treasurer shall be ex-officio members.

Section 3.—The board of directors shall have general charge of the business of the federation, until such date as may be named for the next annual convention—not later than June 1, 1912, with full power to employ a secretary and such other assistants as they may deem necessary for the furtherance of the purposes of the organization.

Section 4.—The duties of the officers of this federation shall be such as usually pertain to the officers of similar organizations.

Section 5.—The secretary and treasurer of this organization shall be required to give such bonds as may be required by the board of directors.

Section 6.—A majority of the board of directors or executive committee shall constitute a quorum for the transaction of business.

Section 7.—To defray the expenses of this organization the board of directors shall fix a per capita tax not to exceed 50 cents.

Section 8.—The board of directors shall have the power to formulate such bills as in their judgment may be necessary, to expedite the purposes of this organization, and to submit the same to the first national convention after approval.

Section 9.—Amendments to this constitution may be made by the executive committee—such amendments to have the approval of the board of directors and to have the same force and effect as if adopted by the convention, and be binding until the next convention, when they shall be submitted for approval.

The report of the committee was then read section by section and each section adopted by a vote of the members.



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Open  
Mouth



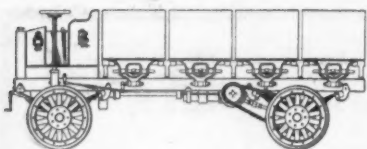
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WATERPROOF PAPER BAG  
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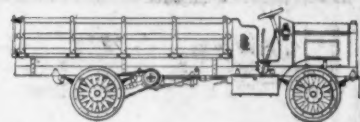
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Both types made in three and five ton sizes.



Not assembled but designed and manufactured complete in our own shops. (We buy only the chains, roller bearings and muffler. Castings made from our patterns.)

After eight years of experience in the Automobile business, both mechanically and commercially, we have in the "Longest" truck selected those points of construction which have proven themselves by test to be right.

Examine our various selections in construction, compare them with the best points in other leading trucks. We have not experimented. Only tried out and approved principles have been adopted.

Our first truck was exhibited at the Louisville Automobile Show in March, 1910. Since then a thorough test has convinced us that we have a first-class article which we can recommend in every respect and which will stand the tests of time.

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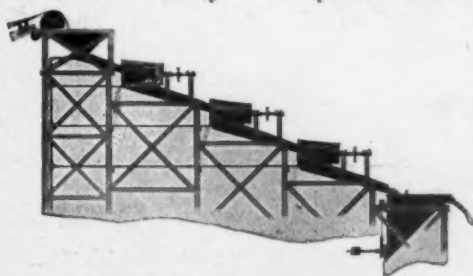


# The "S-A" System of Washing Gravel

By Use of the

## Improved Gilbert Screen

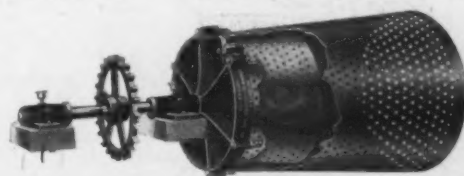
Our gravel washing plants produce gravel so clean as to pass the most exacting specifications, and at a cost below that of any other system of like capacity.



A Typical Gilbert Screen Arrangement. Patented.

This arrangement shows an "S-A" Belt Conveyor delivering to a series of three Improved Gilbert Screens and the "S-A" Settling Tank. In operation, the gravel is delivered by the conveyor to the hopper shown at the upper left. The gravel falls into the chute below the hopper and is, there, met by a stream of water which washes it into the first screen. This screen rejects the largest size of the gravel. As the gravel works its way toward the large end of the screen, it is again met by a stream of water which washes and tumbles the small stones forcing the fine material through the perforations very rapidly. This process is repeated in the other screens, each time rejecting a finer product. The settling tank at the right allows the water containing the clay and loam to pass through the over-flow. The clean sand passes through the gate at the bottom into the bin.

*We shall be pleased to submit plans and estimates for a Gravel Washing Plant of any capacity.*



The Improved Gilbert Screen, in Section. Patented.

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Conveying, Screening, Transmission Machinery

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In the last analysis, it is only the low-magnesia Portland Cement which may be adjudged safe for permanent concrete work. Chemistry warns you that "magnesia is almost insoluble in water." This fact is not always given that serious degree of consideration which it deserves. The standard Specifications are known to be lax in this particular; but this is no valid excuse for those charged with determining the brand to be used in a particular case. Why accept 4%—magnesia cement when you can get Superior with less than 1%? Then Superior's dust-like fineness gives it a further claim on your judgment. It's a true Portland Cement which will endure for ages. Ask for our Free Literature, which will post you on many vital points usually glossed over with an object.

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JUSTUS COLLINS, President

The Superior Portland Cement Co.

## OTTAWA SILICA CO. Ottawa, Ill.

Washed-Steam Dried and Screened

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Unexcelled for

Facing Concrete Blocks  
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Cars or in 175-lb. Bags.

You can order less than a carload, in fact shipments as small as five 175 lb. bags can be delivered economically.

LARGEST SHIPPERS OF WHITE SAND IN THE UNITED STATES

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# WAINWRIGHT GALVANIZED STEEL CORNER BAR

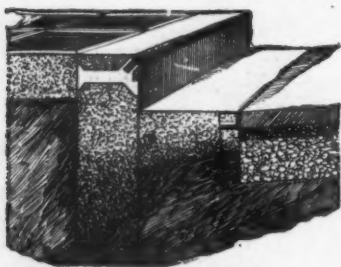
**FOR PROTECTING EDGES OF CONCRETE CURBS, STEPS, COLUMNS, ETC.**

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March 9, 1897  
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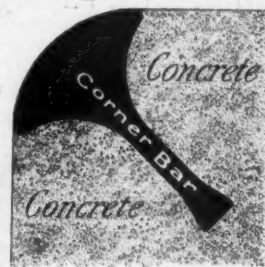
This bar is SELF ANCHORING, the DOVETAILED WEB holding it firmly in place EVERY INCH OF ITS LENGTH, requiring no clips, bolts or wires at intervals, allowing buckling or expansion, causing loosening of curved plates or other devices, which form no permanent protection to the Curb. This bar presents a RESISTING DEPTH of nearly AN INCH OF SOLID STEEL, at any possible point of impact, as compared with other devices using seldom more than one-eighth of an inch of resisting surface.

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**STEEL-BOUND CONCRETE CURB**  
**ABSOLUTELY NON-BREAKABLE**  
**CHEAPER THAN GRANITE**



GALVANIZED STEEL CORNER BAR  
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MECHANICALLY PERFECT AND  
UNEQUALLED FOR CURVED CORNERS

**THE BEST IN THE WORLD** OVER THREE MILLION FEET IN USE IN MORE THAN  
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CITY ENGINEERS can save money by specifying it.

ARCHITECTS are invited to read pages 242 and 243 "Sweet's Index."

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# Concrete

## National Association of Cement Users

Meets Annually.

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 Robert A. Cummings, Pittsburg, Pa.—Measuring Concrete.  
 Peter Gillespie, Toronto, Canada—Nomenclature.  
 Sanford E. Thompson, Newton Highlands, Mass.—Specifications and Methods of Tests for Concrete Materials.  
 Logan Waller Page, Washington D. C.—Education.

Remember the dates of the three great cement shows:

New York—Madison Square Garden, January 29-February 3, 1912.

Chicago—Coliseum, February 21-28, 1912.

Kansas City—Convention Hall, March 14-21, 1912.

### CEMENT SHOWS.

Space Allotments for the Exhibitions of 1912—Presage the Great Popularity of the Events Among the Rank and File of the Industry.

Sufficient applications to insure all the space being taken far in advance of the cement shows have been received by the Cement Products Exhibition Company, 72 West Adams street, Chicago. At the first allotment of space on October 6th there were more applications for space at the 1912 cement shows than have ever before been filed with the Cement Products Exhibition Company. While all of the best locations were drawn, there were some good spaces which were not assigned. These are being disposed of as rapidly as requests for reservations are received.

Unusual interest in the three exhibitions at New York, Chicago and Kansas City is reported. Last year the attendance at the New York Cement Show broke all records and it is expected that the attendance at the next eastern exhibition will be even greater than last year.

The decision of the National Builders' Supply Association to hold their convention in conjunction with the New York show will bring out thousands of building material dealers from all over the country. The combination of New York City, plus the cement show, plus the National Builders' Supply Association should be sufficient to attract an enormous attendance. Another thing which will influence a large attendance among the New Yorkers themselves is the fact that the cement show will be the closing event in Madison Square Garden, which has always been regarded as America's most famous convention and exhibition hall. It seems peculiarly fitting for a cement show to close the Garden, the incident typifying the passing of an old era and the coming of a new epoch of substantial, modern, fireproof concrete steel construction.

For the Chicago and Kansas City shows nearly all of the more important manufacturers of machinery, cement products and appliances have taken space. Although the Kansas City exhibition is the last of the three shows and is the first venture in the Southwest, it is already apparent that the exhibitors are taking a keen interest in the new and resourceful territory of which Kansas City is the center. During the last few years there has been a wonderful business expansion in the Southwest, particularly in the direction of building operations. The Kansas City show will undoubtedly be very largely attended from points

in Iowa, southern Illinois, Missouri, Kansas, Oklahoma, Arkansas and Texas. Rumor has it that the National Association of Cement Users will hold its annual meeting at Kansas City during the time of the cement show. The combination of the Cement Users' convention and the cement show should place the Kansas City meeting on a par in interest and importance with the New York and Chicago shows, which can now be regarded as established institutions.

About two months prior to the 1912 cement shows a campaign of advertising will be inaugurated to bring out a great attendance of architects, contractors, engineers and buyers of cement products and construction equipment. The advantages offered by the cement shows to prospective purchasers of supplies will be forcefully brought out by advertising in the principal journals and by the widest possible distribution of circulars. The cement shows have been called the department store of the cement industry and they offer, in fact, a splendid means for studying, comparing and purchasing machinery and material.

Announcement has just been made of the decision of the National Builders' Supply Association to hold their next annual convention in New York City during the period of the Second Annual New York Cement Show, January 29-February 3, 1912.

This is the first time for several years that the National Association have held their convention in the East. The annual meetings are becoming constantly more important as the association increases its activity and enlarges its cope. The fact that the convention is held at the same time as the cement show and in the same city brings out a greater attendance. Thousands of dealers take advantage of the opportunity of going to New York, attending the convention and spending a couple of days at the cement show at the same time.

Charles Warner, of Wilmington, Del., is president of the National Builders' Supply Association and E. Dinsmore has recently succeeded James Wardrop as secretary.

The Eberling Cement Tile Company has been incorporated at Cleveland, Ohio. Capital stock \$10,000. Incorporators, C. M. Eberling, R. E. Davis C. G. Bleasdale, W. A. Fay and L. Z. Fannery.

The Schirber Concrete Roof Tile Company has been incorporated for \$100,000 at Birmingham, Ala., to manufacture various kinds of tile and cement products. The officers are W. A. Biles, president; Arthur B. Biles, secretary and treasurer, and W. J. Conniff, attorney.

The Raymond Concrete Pile Company, of New York and Chicago, have been awarded the contract for placing the concrete piles for the foundations of the artificial ice plant to be erected at Second and Walnut streets, Milwaukee, for the Joseph Schlitz Brewing Company; Louis Lehle, architect.

The Carnegie Steel Co. is experimenting with cement poles at its works in South Sharon, Pa., and proposes to install them at all its other plants in place of wooden poles if the present experiment is successful. They claim that the concrete will not only outlast the wooden poles, but the satisfaction in connection with electric light wires and cables is much greater.

### IOWA ASSOCIATION

Of Cement Men Have Made Arrangements for Their Eight Annual Convention and Show at Sioux City.

Ira A. Williams, the efficient and popular secretary of the Iowa Association of Cement Users, has sent out the following notice of the next annual meeting of the association:

Arrangements are being made for the eighth Convention and Show, to be held in Sioux City, January 10, 11 and 12, 1912. This event goes to a section of the state this winter that is largely virgin territory from the cement standpoint. Sioux City is Iowa's second city and is so located as to attract cement users from Nebraska, the Dakotas and from Minnesota, besides all of Iowa. These neighboring states are all wide awake and the rapid increase in the use of cement that is taking place should make them a mecca for the sale of cement and all cement using appliances. Sioux City is the business center of this rich territory and the Iowa Show will be the only event of this kind to reach it this year.

Railroad facilities could scarcely be better. Trunk lines of the C. & N. W., the C. M. & St. P., the Illinois Central, the C., St. P., M. & O. railways,

and a branch of the Great Northern, all reach Sioux City. A large amount of cement paving is now under way and the city possesses some examples of concrete construction that cement men will come far to see. An entire packing plant of reinforced concrete is one of these attractions.

The Show will be in the main city auditorium, a structure admirably suited for the purpose. Heavy equipment may be unloaded at the exhibit floor level, through a doorway of ample size to pass the largest machines.

An instructive program is under way. It will include pictures, discussions, papers, addresses. The show and convention will both begin Wednesday, the 10th, and will close Friday night, January 12th, three days of pleasure, instruction and vacation. Although by name it is the Iowa Cement Show and Convention, by location and by invitation, every one interested in any way in cement and its uses, from whatsoever state, is eligible to attendance and membership.

Full information about the meeting may be had by writing the Secretary, Ira A. Williams, Ames, Iowa. Those wishing to join the Association should send the one dollar membership fee to the secretary at once. This will entitle you to all the privileges of the Convention and Show.

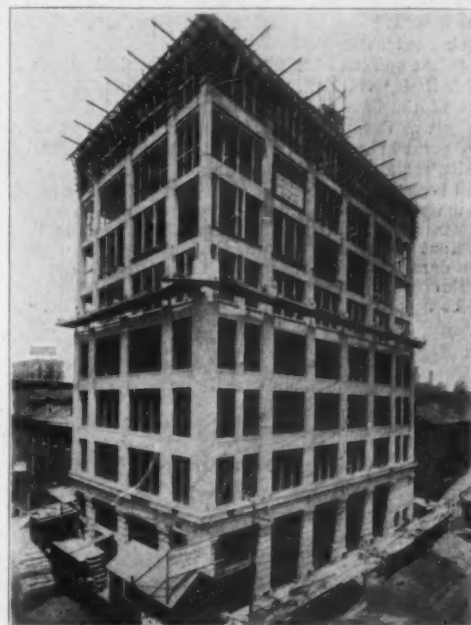
The Officers of the Iowa Association of Cement Users are: President, J. W. Budd, Des Moines, Iowa; vice-president, C. C. Merrillat, Winfield, Iowa; vice-president, H. H. Dean, Payne, Iowa; treasurer, G. E. Tathwell, Waterloo, Iowa; secretary, Ira A. Williams, Ames, Iowa.

### MODEL CONCRETE STRUCTURE.

One of Philadelphia's most recent and modern reinforced concrete buildings is the new building erected for Messrs. Leo and Arthur A. Niessen, wholesale florists, at the northwest corner of Twelfth and Race streets.

The new building is eight stories and basement in height and has the advantage of three street fronts, having a frontage of 58 feet on Race and Spring streets and 100 feet on Twelfth street. The interior and exterior columns, also the floor and roof construction, are of reinforced concrete. Cage construction was used and the entire framework of the building was erected before the walls were begun. There is one row of interior columns extending longitudinally of the building, spaced 16 feet apart, the girders having a span of 29 feet, extending at right angles thereto. The exterior of the building consists of cream color pressed brick, with granite and terra cotta trimmings. The first story is 22 feet in height and contains a mezzanine story of about one-half its area; the upper stories are 13 feet 4 inches in height.

The basement and first story will be used in connection with the wholesale florist business and



LEO & ARTHUR A. NIESSEN'S NEW REINFORCED CONCRETE BUILDING, PHILADELPHIA, PA.

the upper stories will be occupied by tenants for light manufacturing purposes.

The building was designed and supervised during the erection by Ballinger & Perrot, architects and engineers. Bath Portland cement was used. The masons were Irwin & Leighton.

## DAM FAILURE

Great Loss of Life and Destruction at Austin, Pa., Not Due to Concrete But to Carelessness and Bad Design.

The Bayless dam at Austin, Pa., used to secure water power for the Bayless Pulp and Paper Company, broke September 30, and in the resulting rush of water many lives were lost and property valued at \$5,000,000 destroyed. The dam was built in 1909. It contained 15,780 cubic yards of concrete. There were 7,925 yards of excavation in foundations and 6,360 cubic yards of embankment, costing, exclusive of engineering, \$71,821.48. The dam was 350 feet long and 42 feet high. When completed there was one small vertical crack 51.3 feet to the right of the spillway. This crack extended from the top of the ground level and was about one-sixteenth of an inch wide. Later another crack showed up, 39.5 feet to the east of the spillway. This crack was similar in all respects to the other crack and appeared to be due to a contraction, as there was no evidence of a settlement. They could not have been the result of water pressure, because up to this time there had been no water in the dam.

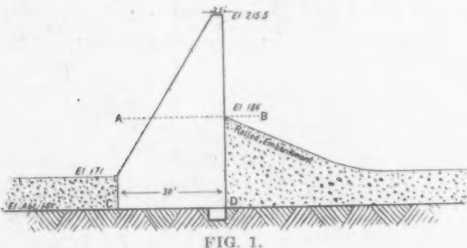


FIG. 1.

During the week of January 17, 1910, the weather grew warm and some rain fell. The heavy snows of the preceding month were rapidly melting, and within three days the dam filled to overflowing, which it was doing on Saturday, January 21. On Sunday afternoon a large slice of the earth forming the eastern hill below the dam dropped down some eight feet and partially slid into the valley, and some water came down under the slide, which was evidently coming from behind the dam. Water in large quantities began coming up through the ground from fifteen to fifty feet downstream from the toe of the dam, showing that the water had gotten under the dam, through the embankment, and through the rock strata.

In the opinion of T. Chalkey Hatton, civil engineer of Wilmington, Del., designer of the dam, the failure of the dam to withstand the flood of last January was due to two causes. One of these is that the great bulk of concrete which had been hurriedly built, some during the freezing weather, and which had been completed about six weeks before the maximum pressure came upon it, had not set so as to attain its ultimate tensile strength. The most important cause, however, was the water getting under the dam. This condition was not anticipated when building the dam, and all precautions that seemed to be necessary at the time were taken against it.

### Opinion of an Expert.

(H. P. Ramey, engineer connected for some time with the Chicago Drainage District, was commissioned by ROCK PRODUCTS to make a full examination of the evidence relating to the failure of this dam, and he makes the following report:)

The failure of the Bayless dam on September 30, 1911, and the incident flood, causing great loss of life and property at Austin and Costello, Pa., is another one of the instances where an effort is made to lock the stable door after the horse is stolen. This happening may be used by the foes of concrete as an argument against the use of concrete, but even a hasty investigation into the causes leading up to this failure will show that such an argument is absurd. All failures of concrete structures can usually be traced to one of three things—faulty design, construction or foundations—and in most cases the latter cause is the fault, because the other two can be more easily taken care of. In a concrete dam built on rock every detail of the design can be checked, every part of the construction can be carefully inspected, but it is a hard job to find out as much about the rock upon which it is built. The rock is usually porous, usually stratified and in nine cases out of ten has between its layers a stratum of impurities, clay, shale or something similar, which prevents it from being as good as what is built upon it. Extensive borings even may not show it up in its true light, because in the borings there is always the chance that the spot which is the worst will be missed. To arrive at the causes of this late catastrophe we will take up these three causes in order and discuss them.

First, the design, and I will refer to the accompanying sketch (Figure 1).

Assuming that the rolled embankment on the upstream side of the dam is impervious, I have figured the dam for stability above the section AB, at elevation 186. The water pressure is 27,200 pounds per lineal foot, the weight of concrete 51,500 pounds per lineal foot and the uplift zero. The resultant pressure passes 1.6 feet inside of the middle third of the base and the center of gravity of the concrete is just inside the middle third. No fault could be found with this.

Assuming that the rolled embankment is not impervious and the underlying rock is porous, permitting hydrostatic pressure against the whole face of the dam and under the base—the worst possible case—the stability is not so good. Figuring the overturning and resisting moments about the edge of the middle third of the base, the overturning moment is 2,200,000 foot pounds and the resisting moment 1,320,000 foot pounds for one lineal foot of the dam. While this would not overturn the dam, it would put tension in the face of the dam, which would be bad practice. The rolled embankment against the face of the dam was to prevent this condition being realized. Whether it prevented it is mere conjecture. I think it is doubtful.

During a flood in January, 1910, a section of the dam near the middle slid downstream as much as eighteen inches at one point. This has been discussed in the Engineering News of March 17, 1910. The resistance to this action was the friction of the concrete against the rock on which it was built; on going deeper, the friction of one stratum of rock upon another. Had the dam been built in the form of an arch, which seems to be the best practice at the present time, this frictional resistance would have been spread over a much larger



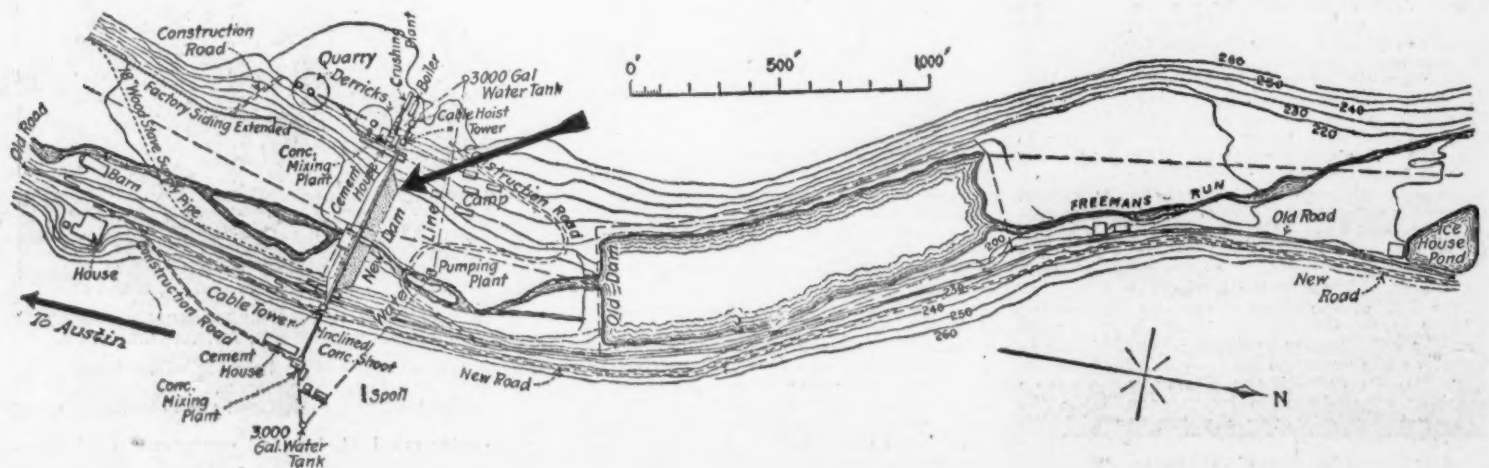
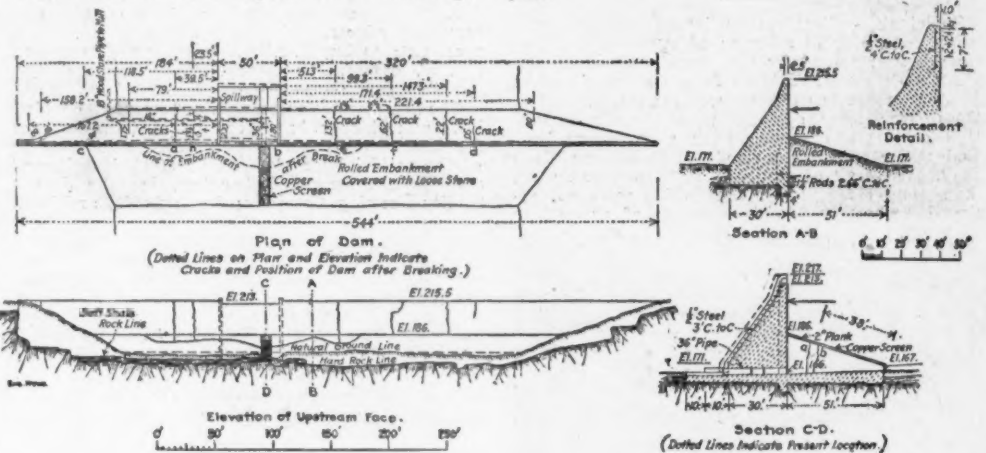
THE BROKEN DAM OF THE BAYLESS PAPER MILL.

area—in fact, over the base of the whole structure, and in this way would have been much greater. This is practically the only fault which might be found with the design.

As to the construction: The quantity of concrete was large, 15,780 cubic yards, and it was hurriedly placed. Some of it was placed in freezing weather, about six weeks before the flood of January, 1910, and in the continued cold weather had no chance to attain its proper strength before it was subjected to an unusual strain. Then, too, when the dam was completed, but before the water was turned in, two vertical cracks appeared, due probably to contraction, as there was no sign of settlement in the base. On these accounts some fault might be found with the construction.

Last, the foundation: After the flood of January, 1910, it was observed that a portion of the rolled embankment on the upstream side of the dam had been washed away, some of it going under the dam. Also the toe of the dam had settled a little at one point. This indicated that the fault might be with the rock foundation upon which the dam rested. Accordingly, excavations were made at the bottom of the concrete on the upstream side and it was found that the stratum of rock directly under the concrete had broken at a point twelve feet from the face of the dam and slid downstream. This stratum was six feet thick. The water, getting under this layer of rock, softened up a layer of clay between it and the layer below and introduced hydrostatic pressure under the dam. This pressure worked up against the weight of the concrete and permitted the top layer of rock to slide forward on the lower one and the thin stratum of clay between the two, being wet, served as an ideal lubricant.

Since these conditions were observed after the flood in January, 1910, when the dam was put to a severe test and almost failed, it is almost a certainty that the same causes led to its going out on September 30, 1911. We say that the Bayless dam failed on September 30, 1911. It really failed in January, 1910. It was said to leak then; but the real failure had already taken place.







WRECKAGE IN FRONT OF GOODYEAR HOTEL.

The causes—the same three that we started with—foundation, design, construction; not the material of which it was built. The foundation was not solid rock, since the rock moved. The rock moving, permitted water to get under the base of the dam, introducing hydrostatic pressure upward, a thing not provided for in the design. As for construction, the rolled embankment on the upstream side, evidently put in to prevent the water getting to the rock and from there to the base of the dam, proved not impervious as it should have. These three caused the failure of the Bayless dam in January, 1910, or September, 1911, whichever you prefer.

#### COLORADO RIVER DAM.

Austin, Texas, Oct. 15.—After several years of labored effort this city has finally succeeded in making financial arrangements for the reconstruction of the great dam across the Colorado river which was destroyed by a flood in 1900. The original structure and the hydro-electric plant,

iam D. Johnson, of Hartford, Conn., is the head. The city agrees to pay the company \$1,720,000 for replacing the works, the payments to be made in semi-annual installments of \$25,000 each.

The new dam will be 68 feet high which is five feet higher than the original structure. It will be of reinforced concrete structure. It will run horsepower to be generated will be 5,000. The dam will form a great lake, which will be used as a pleasure resort by the people of the city.

The ruins of the old dam are still standing and their removal will not be necessary to make room for the new structure, it is stated. Material and machinery is being assembled and preparations are going on energetically toward active construction operations.

#### WATER FOUNTAIN.

Concrete Monument for a Park in Jersey City Is the Largest of Its Kind Ever Erected in this Country.

The largest concrete water fountain and monument ever erected in this country was recently dedicated at West Side Park, Jersey City, New Jersey. The monument harmonizes entirely with its surroundings, making it a beautiful and dignified decorative feature from any point of view, especially from the main approach of the park. It was designed by Pierre J. Cheron, a New York sculptor, of 1947 Broadway, and the construction work was done by the Erkins Company. It is 53 feet in height, and its weight is over 350 tons. The main base of the fountain is fourteen feet high. The three shelves on the curve of the base



SCULPTOR PIERRE J. CHERON AT WORK ON ONE OF THE TRITONS FOR THE FOUNTAIN.

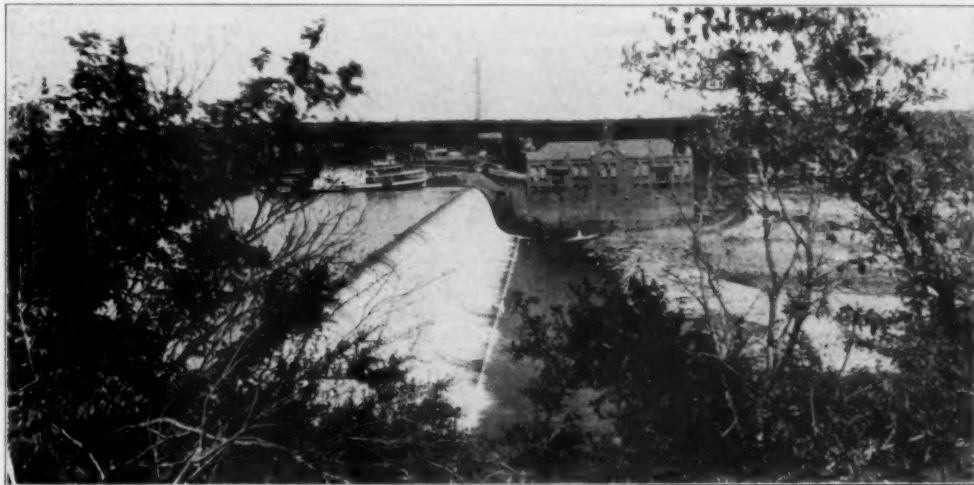
This work creates a new and apparently successful field for concrete engineering.

The photograph showing the sculptor at work on one of the tritons for the base of the column conveys an accurate idea of the actual size of these figures.

In speaking of the use of concrete in monumental construction, Mr. Cheron said: "Concrete must never be designed for or used as a substitute for stone in monumental work, but rather as an art in itself, as distinct in appearance and style as the method of casting is distinct from carving. It must also be different from bronze casting. In other words, concrete should lead us into a new field of art with unlimited possibilities."

The Maul Company has been incorporated at Detroit, Mich., with \$4,000 capital stock to manufacture artificial stone and cement products.

The Union Stone Company has been incorporated at Wilmington, Del., with a capital stock of \$30,000. The incorporators are Waldo C. Wilson, E. C. Anderson and Charles B. Brown, all of Wilmington, Del.



DAM ACROSS COLORADO RIVER AT AUSTIN, TEXAS, AS IT APPEARED BEFORE IT WAS WASHED AWAY.

which was also swept away by the mountain of water, cost \$1,600,000. The dam was a rock and concrete structure. When the wall of water in the river struck it a large section was lifted bodily from its foundation and carried a short distance down stream.

Under the new arrangement which the city has made for rebuilding the dam and installing the hydro-electric plant the cost of the improvement is to be paid out of the earnings of the municipal electric light and power plant and the water works system. The contract has been let to the Hydraulic Properties Company, of New York, of which Will-

each measures eight feet across, while the dolphins are six feet long. The main bowl is sixteen feet in diameter, from the center of which runs the main shaft of monolithic construction. It is fluted, measures twenty and a half feet wide, and is in turn surmounted by an upper basin. The latter measures eight feet in diameter, and on top is another column seven feet and four inches in height. The eagle surmounting the monument is two and a half feet high, making a total of fifty-three feet. The fountain has twenty-seven water spouts and is equipped with 150 electric lamps, which will make a unique and brilliant illumination at night. There are also twenty-four large concrete vases equally distant on the basin wall.

On account of the great size of the various parts the architectural forms were constructed at the park. The plaster moulds were first set in position and the concrete was reinforced with rods of corrugated iron; then the water pipes for the spray and the conduits for the concealed electric lamps were installed. As the work advanced from one section to another the plaster moulds were left in place until the top was reached. The moulds were kept wet while the concrete was hardening. The sculptured sections were cast in moulds made from the artist's models, and were also permitted to harden by slow degrees.

Work has progressed daily on the fountain for the past five months. The construction company has guaranteed the fountain for ten years, but the sculptor says by that time the concrete will be so hard, owing to the fact that water will continually flow over its surface that it will be absolutely permanent.



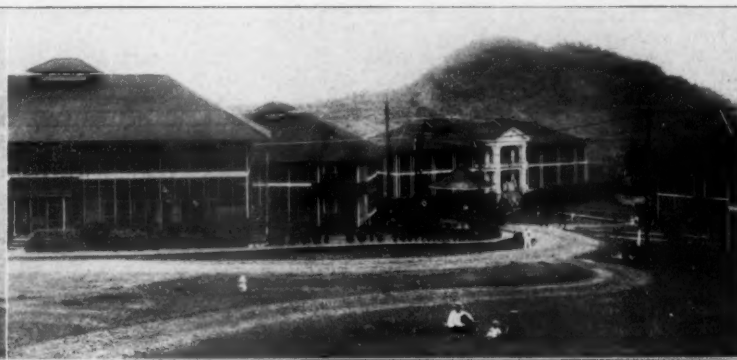
RUINS OF THE DAM AT AUSTIN, TEX.



CONCRETE WATER FOUNTAIN AT WEST SIDE PARK, JERSEY CITY, N. J.



COMBINED DYKE AND DUMP FROM EAST BALBOA TO NAOS ISLAND, MARCH, 1911.



CLUB HOUSE AND QUARTERS, CULEBRA.

**PROBLEMS OF THE PANAMA CANAL.**

[Continued from Page 3.]

of the water is at 85 feet above sea level, the lake will have an area of about 164 square miles and will contain about 206 billion cubic feet of water. The water surface of the lake will be maintained during the rainy season at 87 feet above canal level, making the minimum channel depth in the canal 47 feet. Ample water is provided for 41 passages daily through the locks, using them at full length or about 58 lockages a day when partial length is used. If anything should happen to this gigantic dam, the ensuing disaster would probably be as great as the pessimistic prediction of Mr. Granger.

There are two other dams, one an earth dam connecting the locks at Pedro Miguel with the high ground to the westward. This will be about 1,400 feet long with its crest at an elevation of 105 feet. A concrete core wall containing about 700 cubic yards will connect the locks with the hills to the eastward. This core wall will rest directly on the rock surface and is designed to prevent percolation through the earth, the surface of which is above the lock level.

Depending on these dams are six double locks, three pairs in flight at Gatun, with a combined lift of 85 feet; one pair at Pedro Miguel with a lift of 30½ feet and two pairs at Miraflores with a lift of 54½ feet. The usable dimensions of all are the same—a length of one thousand feet and width of 110 feet. Each lock will be chambered with walls and floor of concrete. Mitering gates will be at each end. The lock gates will be steel structures 7 feet thick, 65 feet long and from 47 to 82 feet high. They will weigh from 300 to 600 tons each. The locks will be filled and emptied through a system of culverts. One culvert 254 square feet in area of cross sections, about the area of the Hudson River channels of the Pennsylvania railroad, extends the entire length of each of the middle and side walls and from each of these large culverts there are several smaller culverts which extend under the floor of the lake and communicate with the lock chamber through holes in the floor.

From this meagre description of that portion of the great engineering feat concerning the locks

and dams, an idea may be had of the cause of apprehension that in some manner the construction may be weakened so as to precipitate a calamity whose consequences would far exceed anything of the kind the world has ever seen.

Pertinent to the above is the inquiry "Is the Panama Canal destined to be the greatest disappointment the American people have ever experienced?" That startling question is now being seriously considered in Washington and at the present time opinion seems to incline toward a positive "Yes." A situation where the American people run the risk of being cheated out of the results of the vast expenditure of money and labor on the great ditch is almost inconceivable and such a possibility is at first calculated to excite derisive scorn, but thinking men are weighing the subject carefully and find little to satisfy them. It is not denied that the canal will be advantageous from a military standpoint. Provided it is left in working order during a war the fleet can easily be shifted from one coast to another and the country may find a smaller naval force as potent as a much greater one would be if there was no canal. It will prove of immense value to the world's commerce. Water-borne commerce from New York to the Orient or from San Francisco to Europe, as well as that in the opposite direction, will move more rapidly and at less expense, and freight rates on such commerce will be reduced with an incidental benefit to the consumer. But how about the trade between the Atlantic and Pacific coasts, and what about the effect of the canal upon the vast population in the interior of the United States? But one answer can be returned to that question, and that is that with things as they are, the canal will have no effect whatever upon the interstate business of the United States! That condition is what is making those interested sit up and think. That it must be remedied is admitted by all who have considered the matter, but how? is a question yet unanswered.

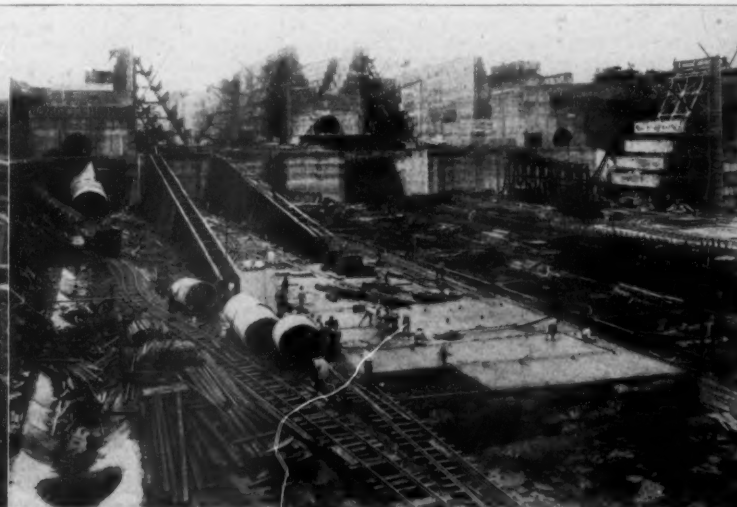
Paradoxical it may seem, the very rapidity with which the Panama Canal is being completed makes the situation the more serious. The public clamored to see "the dirt fly" until all speed was put on, and now that the canal is approaching completion they are beginning to wonder what they are to do to profit by it. Few Americans understand that in

less than two years there will be ships passing through the canal unless there should be unexpected delays. Considering that it takes eighteen months to two years to construct a modern vessel and put it into trade, a fleet to pass through the canal could scarcely be in readiness if work were begun immediately, and as the United States has no merchant vessels already built that can go into the Atlantic-Pacific coast trade, with the possible exception of those controlled by the railroad interests, new vessels must be built. That is, if the canal is to affect interstate commerce, without which effect only a very limited portion of the population of the United States can hope to benefit from its construction.

It is estimated that sixteen-knot steamers can make the trip from New York to Los Angeles in sixteen days and to San Francisco in eighteen days, which is substantially the running time of freight trains. The fast fruit trains do it in a trifle less. Water rates being always less than competitive rates it is evident that such steamers can carry both passengers and freight at less rates than the trans-continental lines, and the time being the same, or approximately so, for freight, there will be a considerable diversion of traffic from the trans-continental lines to the ships—provided there are any ships. While the lower freight rates on this coast-to-coast commerce would primarily benefit the people living nearest the coasts, those further in the interior would also be benefitted, first by sharing in the reduction on the through commerce and second, by the reduction of railroad rates incidental to their readjustment to meet the water competition from coast to coast. Thus those in the immediate coastal region, living within a few hundred miles of the great ports, would directly profit from the construction of the canal. As it would cost less to land California fruits in the Eastern markets via the canal, the total expense of placing them in the hands of consumers near the Eastern coast would be proportionately less; the converse would apply to the shipments of machinery, manufactures and other Eastern products consigned to persons in the region between the Rockies and the Pacific. To meet such rates by water as the steamships would find profitable the railroads may be expected to reduce their rates on through traffic and as the fabric of rates is closely



GATUN MIDDLE LOCKS CONSTRUCTION OF CENTER WALL, SHOWING EAST CHAMBER, LOOKING NORTH FROM UPPER LOCKS, APRIL 15, 1911.



GATUN MIDDLE LOCKS, LOOKING SOUTH FROM EAST BANK, APRIL 15, 1911.



interwoven some benefit may reasonably be expected to trickle through until even the people in the far interior may profit. That is, provided there are any ships, and, again, provided those ships are not owned or controlled by the competing railroads. If the railroads own the ships or the railroads and the ships are owned by the same parties, it would make little difference to the shipper whether his consignment went by rail or water; he would pay much the same.

It is admitted that the opening of the canal will necessitate the revision of the shipping rates of the entire world. What a gigantic task this will be, taxes the imagination. Incidental thereto are the projections of new routes from the Orient to the Occident and the opening up of new or comparatively new countries and their development. The eyes of the shipping world are turned toward the work Col. Goethals and his engineers are doing and countless business men all over the world are preparing themselves to meet the new shipping conditions.

Meanwhile Postmaster General Hitchcock is going ahead doing what he can to encourage the construction of some American ships that will engage in the coast-to-coast trade so that when the canal is opened some benefit will ensue to the interstate shippers and to the consumers on the one coast of the products of the other. He plans that three years from now, namely on October 18, 1914, there will be a fleet of mail carrying steamers plying from Portland and Seattle, through the canal to Charlestown, Savannah and New York, and making the return trip. Bids for this service are to be opened next month—November 25, 1911. The advertisements provide for 52 sailings per year from New York to Colon, with every other steamer stopping alternatively at Charleston or Savannah; 52 sailings a year from New Orleans to Colon; 26 sailings a year from Seattle to Panama calling at San Francisco and alternately at San Pedro or San Diego, and 26 sailings a year from San Francisco to Panama, every steamer stopping alternately at San Pedro or San Diego. The maximum rate of compensation for this service is \$2 per statute mile each steamer travels and the total payments on all the routes at this rate would be approximately \$750,000 per annum for ten years. As there are not likely to be more than two bidders and probably only one, it is unlikely the bids will be under the maximum; whatever competition there may be will come over the question of the ability of the bidder to satisfy the Postmaster General that the contract, if awarded, will be executed. As an evidence of good faith prospective bidders must furnish a bond of from \$75,000 to \$200,000 with each bid which insures the good faith of the bidders.

It is expected that the government will lose money on these contracts, at least for the first period.

The 13th census shows that 5,177,478 people live in the states west of the Rocky Mountains and of this number four million are in the states bordering on the Pacific coast. In the East, between the Mississippi River and the Atlantic Ocean there are 61,956,739 people of which number forty million inhabit the states bordering on the Atlantic, Mexican and Gulf coasts. The large and ever increasing traffic between these two coasts has heretofore

been handled by rail and rail transportation is costly and in the case of heavy traffic is arduous and slow. Yet in spite of the necessarily high rates prevailing this commerce was estimated by the railroads to amount to more than three million tons for the year 1909, and in one of his opinions Interstate Commerce Commissioner Lane estimates that it is increasing at the rate of ten percent each year. Ninety percent of this entire traffic is now transported over the Rocky Mountains by the railroads and only ten percent goes via the Tehauntepec, the Panama and Magellan routes. By the time the canal is open this traffic will have increased at the above rate to 4,200,000 tons a year. The reason for such a preponderance by rail notwithstanding the great physical disadvantage by that method of transportation, is not difficult to determine. The Tehauntepec route involves the re-handling of freight from steamers to cars at the Isthmus of Tehauntepec and then from cars back to other steamers before through connection can be made. The Panama route at present also necessitates transshipment and has for years been under the control of the transcontinental railroads through stock ownership of the Pacific Mail Steamship Co. The Magellan route around the south of South America is much too long for practical use.

The opening of the Panama Canal will change all this provided there is an independent line of ships. The converse is true, that if the ships which ply from coast to coast through the canal are owned by the railroads, the traffic will be divided between the railroads and the ships in very much the same manner as it is now and it is at least reasonable to presume that the water and rail rates will be pretty much the same.

One of the most fruitful efforts of speculation in connection with the canal concerns the possibilities of the development of Central American trade by way of the Panama Canal with all the Latin American Republics, especially in the immediate proximity of the canal. The Pan American Union reports that in 1910 there were over fourteen million people living within the trade radius of the canal zone. This country is traversed by very few railroads and the different gauges show that the cars cannot be interchanged. There are very few harbors at which steamers of deep draft can enter, so that the slow and expensive system of lighterage is generally necessary. The banking system is obsolete and imperfect and there are many other reasons why this trade is in its infancy. Yet in spite of these disadvantages the foreign commerce amounted in 1910 to \$135,000,000. Of this amount they bought from the United States less than \$9,000,000 and shipped to us less than \$18,000,000, though the United States is their natural source of supply. A large portion of this commerce should be diverted to this country as soon as facilities are provided, and it is capable of an increase almost incalculable at this time.

To reach these countries, in connection with ships passing through the canal, it is proposed to operate sea-going self-propelled steel barges of light draft from the canal entrance up and down the coast for general assortments of cargo to be transferred to the large steamers at the canal entrance. Such barges, being of light draft would be able to penetrate the shallow roadsteads and rivers which a deep draft steamer cannot enter and in

this matter an enormous traffic in all probability may be developed. Recognizing the possibilities the Isthmian Canal Commission has arranged for the construction of large docks and warehouses at both Colon and Balboa to provide for this class of traffic and at these points it can be transhipped at a minimum expense and loss of time.

The total amount of concrete laid for the Panama Canal during the fiscal year 1910-11 was 1,742,928 cubic yards. The cost per cubic yard for concrete in the Gatun Locks was \$6.5919; in the Gatun Spillway, \$6.7044; in the Pedro Miguel Locks, \$4.7040; and in the Miraflores Locks, \$4.6826. At Gatun, 73,609 cubic yards of large rock were used, resulting in a saving of \$263,137.45, or of 0.2888 cents per cubic yard on each yard of material placed. In the production of stone for the concrete, the cost in bins at Gatun was \$2.3403 per cubic yard, and in the storage pile for the locks on the Pacific side, \$0.8443 per cubic yard.

Cement for the large part is delivered in barrels to the Atlantic division at a cost of \$1.19 at tidewater in the United States, while in the Pacific division it is delivered in bags at a cost of \$1.60 at tidewater in the United States per barrel, less credit for return of bags. As approximately 90 per cent of the bags were returned and accepted, the cement in bags cost \$1.01 per barrel at tidewater in the United States.

#### NORTHWESTERN SHOW IN MARCH.

The Northwestern Cement Products Association held a meeting recently at the Radison Hotel in Minneapolis, at which plans were perfected for holding the Cement Show during the first week in March. The following officers were elected for the ensuing year: President, W. S. Kingsley; secretary, J. C. Van Doorn; treasurer, J. M. Hazen; vice-president, H. E. Murphy, E. H. Atkinson for South Dakota, A. G. Peterson for North Dakota, D. L. Bell and C. K. Anderson for Minnesota.

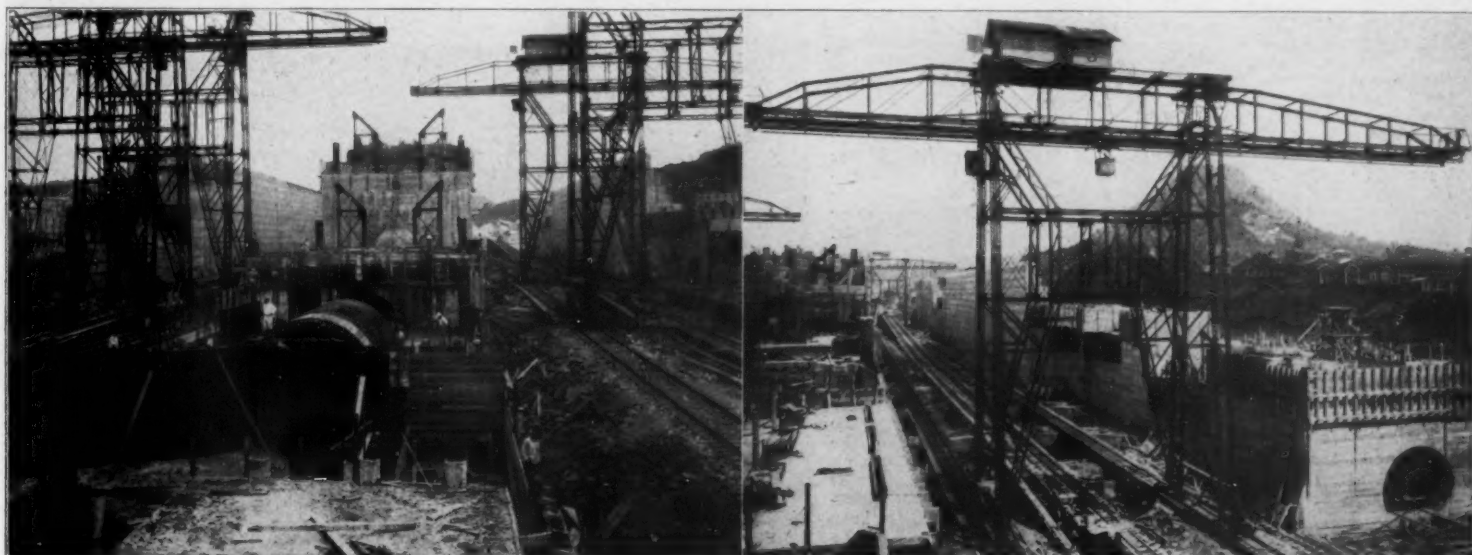
Frank P. Morton who lives near Chambersburg, Kans., has secured a patent on a cement culvert form.

The American Cement Machine Company has been incorporated at Madison, Wis. Capital stock \$25,000. Incorporators, John F. Culbertson, Helen E. Mandt, Cyril E. Marks.

The first concrete snow sheds ever constructed have just been finished in the heart of the Cascade mountains, on the stretch of road near Scenic Springs which suffered recently from snow slides.

The Raymond Concrete Pile Company of New York and Chicago has been awarded the contract for the reinforced concrete crane track foundations at the works of the Maryland Steel Company, Sparrows Point, Md.; George C. Shepard, Chief Engineer, marine department.

The contract for placing the concrete piles for the foundations of a boiler house and coal bins to be erected at the Park works of the Crucible Steel Company of America, Pittsburgh, has been awarded to the Raymond Concrete Pile Company of New York and Chicago; James Brennan, chief engineer.



PEDRO MIGUEL LOCKS, LOWER END, SHOWING OUTLET FORMS IN CENTER WALL, LOOKING NORTH.—JANUARY, 1911.

PEDRO MIGUEL LOCKS, EAST CHAMBER, LOOKING NORTH, FROM LOWER APPROACH WALL.—MARCH 28, 1911.

# WORLD'S LARGEST CONCRETE ELEVATOR

Structure at Fort William on the Grand Trunk and Pacific Railway a Mammoth Storehouse for the Grain Crops of the Canadian Northwest.

One of the most successful uses to which concrete has been put recently is in the building of great grain elevators with this material. Concrete appeals to grain men because grain stored in a structure of this character is not only protected from the ravages of fire but also of rats and mice. In Illinois and in the southwest are a number of

loading is usually a matter of some days. In order that loading of all classes of cargoes may be done at the same time it is necessary to construct long conveyor galleries to transport grain to vessels which may lie at warehouse docks a considerable distance from the elevator.

On the Great Lakes, where grain generally forms

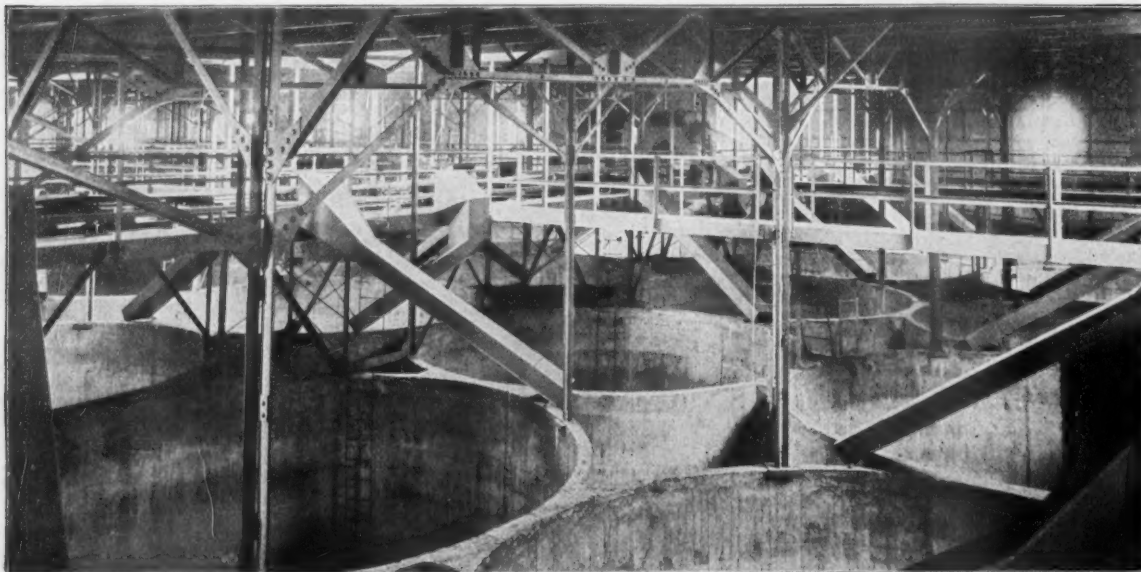
so that they form a harmonious unit.

The working house, facing the slip through its entire length, is admirably suited for the rapid shipment of grain. It consists essentially of 75 circular concrete bins, having an inside diameter of 12 ft. and rising to a height of 79 ft. They are arranged in five rows of 15 bins each, forming 56 interstices bins, and making the working house 69 ft. wide by 237 ft. long. These bins are supported by a series of octagonal columns forming a working story 20 ft. high. Surmounting these bins is a structural steel cupola 83 ft. high, sheathed with corrugated steel and roofed with concrete.

Between the working house and storage annex is located the track shed, a steel framed structure 68 ft. wide by 240 ft. long, having a concrete foundation and roof. It contains four tracks with pit and shovel accommodations for twenty cars, which may be unloaded at one time. Under normal conditions 200 cars may easily be unloaded in ten hours and under stress 500 cars may be unloaded in 24 hours.

For the storage of such immense quantities of grain the problem arose as to what would be the best size and arrangement of tanks for the storage annex. As built, the annex consists of 70 circular concrete tanks arranged in ten rows of seven tanks. They have an inside diameter of 23 ft. 3 inches and are 95 ft. high. Fifty-four interstices bins formed between the circular tanks are also utilized for storage. The tanks are supported on a concrete mattress and walls. The cupola over the annex is of steel construction and is roofed with concrete. Five overhead bridges connect the storage annex with the working house and provide passageway for the conveyors. Steel galleries and cross walks were built over the storage tanks in the annex with open areas between; thus making it possible to heap the grain above the top of the bins.

The preliminary work entailed by an undertaking of such magnitude as the construction of the Grand Trunk Pacific elevator may be realized by an examination of the plans. Fifteen men were employed at the Walkerville office of the contractors for many months, designing, drawing and



CONVEYOR BELTS, TRIPPER AND SPOUTS ABOVE BINS IN S STORAGE ANNEX OF GRAND TRUNK PACIFIC ELEVATOR.

elevators built of concrete, but the largest enterprise of this kind is located at Fort William on the Grand Trunk Pacific Railway. Through the courtesy of the Grain Dealers Journal we are able to present a description of this mammoth enterprise which ought to prove interesting to cement men. The Grand Trunk Pacific Railway planned to construct what will be the largest grain elevator in the world. Its terminal elevator system at Fort William is designed in four units of 10,000,000 bushels each and the first section, having a capacity of three and a half million bushels, was completed last year. In order to take advantage of lower freight rates on the great lakes, wheat in the fall months is rushed from the threshing machines through the country receiving houses to terminal elevators on Lake Superior and there loaded into lake vessels. For the prompt and efficient handling of the western crop unusual facilities are necessary at the head of the lakes.

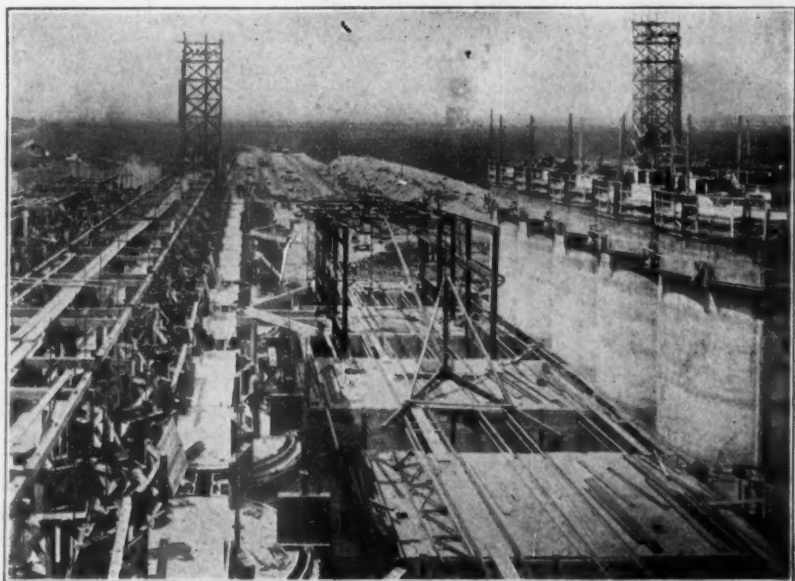
To the layman a grain elevator seems an unsightly structure whose walls look so blank and bare that further investigation seems uninteresting. In the past that picture was true enough, but today with the introduction of steel and concrete as building materials a great elevator reared against the sky has a rugged aspect which invites attention. Every line speaks of utility and efficiency and one is reminded of the cleanest lines of the thoroughbred. Of such an appearance is the elevator of the Grand Trunk Pacific at Fort William.

Preliminary sketches of the elevator were made in 1905 and were further elaborated during 1906 and 1907 by the railroad engineers. In 1908 the Canadian Stewart Company, Limited, prepared designs for the elevator, and a contract was let to it on its plans and specifications. Examples of this firm's work may be found from London to San Francisco and from New Orleans to Fort William. Its principal office in Canada is in Montreal; the home office is in New York, with branches in all of the principal cities of the United States.

Grain elevators in general features are quite similar to one another, yet differ in many essentials on account of local conditions. From the small country elevator, receiving grain from wagons and loading into cars is a far cry to the huge terminal elevators of the Great Lakes or Gulf of Mexico and Atlantic ports. These also are differentiated. Ocean going vessels carry miscellaneous cargoes of package freight as well as grain and

an entire cargo, the vessels lie directly in front of the elevator and by means of spouts discharging through a series of deck hatches are loaded in a few hours. Another feature distinguishing marine elevators at the head of the Great Lakes from those on the Atlantic and Gulf coasts is the ample and elaborate cleaning facilities provided. Nearly all grain received from the West at Duluth or Fort William is carefully cleaned before being shipped, and for this purpose extensive and elaborate batteries of warehouse separators for wheat, oats, flax and screenings are installed.

By reference to the illustrations an idea of the general lay out of the Grand Trunk Pacific elevator may be obtained. The plant consists of a working house with a capacity of 750,000 bushels, a storage annex of 2,750,000 bushels capacity, a four track receiving shed, a dryer house, a boiler house, a switchboard room and transformer house. In front of the working house a concrete dock 337 ft. long was constructed for the accommodation of vessels receiving their cargoes of grain. It is essential that the various factors in any grain elevator form a compact system, as on this element depends to a great extent the efficiency of the plant. In the Grand Trunk Pacific elevator excellent judgment has been shown by the designers in arranging the various structures



RECEIVING PITS AND BINS OF GRAND TRUNK PACIFIC ELEVATOR IN COURSE OF CONSTRUCTION.



tracing, and \$20,000.00 was spent on this item alone. Every little detail to the last rivet and rope sheave was drawn out before being used for construction. The designing and drafting was carried out under the direction of R. H. Folwell, Chief Engineer, and the work of construction was superintended by W. R. Sinks, General Manager of the Canadian Stewart Company, Limited. The owners were represented by John S. Metcalf, who approved the plans and inspected the construction of the work.

The actual work of construction began on Nov. 21st, 1908, the Mayor of Fort William turning the first sod on that date in the presence of over three thousand invited guests. From that date excavation for foundations was vigorously pushed under weather conditions which were far from ideal. With the thermometer registering as low as 55 degrees below zero, it required pluck as well as perfect organization to perform without interruption the task of removing 60,000 yards of frozen clay and sand. A steam shovel and the operation of trains of dump cars over 6,000 feet of track, necessary to waste the excavated material, presented an animated scene.

Pile driving closely followed the commencement of excavation. The piling consisting of 12,000 sticks of timbers 60 feet long, was driven to rock, which was done by two drivers working day and night for ninety days. With the advent of spring, the site was in readiness for the concrete foundation proper.

The methods of handling and placing concrete in the foundation did not differ much from the general practice in such work, but it is noteworthy to remark the rapid progress made. While the first concrete was laid in March, the foundations were completed to the top of the bin supporting floor in May. During the time the foundation work was being done, the circular tank forms were made and when the bin supporting floor was laid the tank forms were in readiness for placing. These forms, embodying the experience of years of concrete grain elevator construction, are an evolution from the crude methods first employed on circular bins. An absolutely smooth surface without breaks or unsightly rings and offsets is obtained by their use. The laying of concrete is practically continuous from the placing of the bottom until the top of the tanks is reached. The forms in general consist of an inner and outer wall section four feet high which are held apart by yokes, a sort of steel clothespin made up of plates and channels and supported by lifting jacks, an ingenious device patented by W. R. Sinks and R. H. Folwell of the Canadian Stewart Company, Limited.

Though there are a number of other kinds of jacks for movable forms in use, yet this jack has special advantages which are apparent to all who have had experience in the use of movable forms for concrete walls. The essential element of the invention is a hollow jack screw through which is inserted a vertical rod and upon which the jacks are made to climb and thereby raise the forms. In operating the jacks, a workman inserts a bar in a socket, causing a screw to turn. By turning to the right the forms are lifted, and by turning to the left the jack itself climbs the rod while the forms remain stationary, being supported by the adjacent jacks. By reason of the rod passing through the jack the load is applied concentrically, and thus any tendency for the forms to bind is eliminated. Another great advantage of the device is that it does not have to be dismantled when a new length of rod is inserted. By this system the position of the horizontal rein-

forcing rods may be marked on the jacking rods, which is a matter of great convenience; also, daily progress of the work may be accurately observed and the forms are kept level throughout the entire work by reference to the marks.

The forms of the separate tanks though constructed in sections are tied together by an arrangement of rods attached from yoke to yoke, making a united system and providing an ample floor space for workmen. For each tank eight yokes and jacks were used, operated in sequence, one being turned a little at a time. The annex walls were completed on August 15th. In the meantime the working house bins were rising and the final concrete was placed August 31st. Immediately upon the final completion of the tanks, the erection of the steel cupola framing was commenced. Fifteen hundred tons of steel was used in the construction. In December, 1909, the framing for the cupolas had been erected and enclosed and the floors and roofs were completed. All roofs are covered with five-ply composition pitch felt and gravel. Sheet metal window frames glazed with quarter inch wire ribbed glass and steel-clad doors completed the construction of buildings which are fireproof to the last degree.

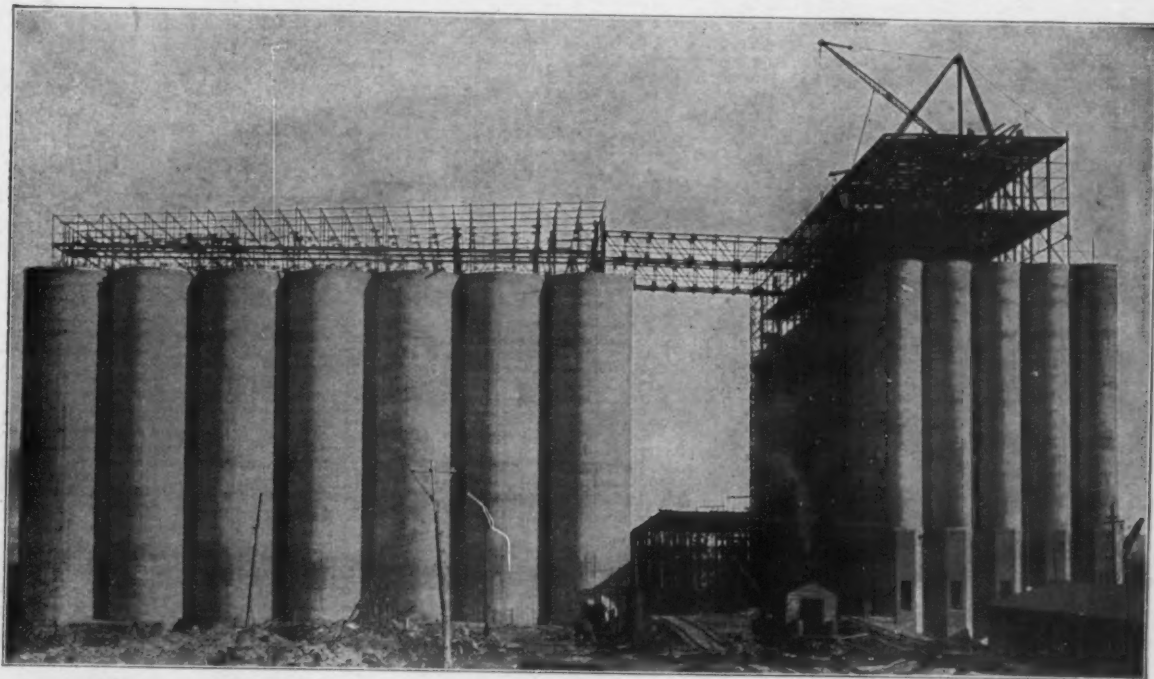
Other features that added to the rapidity of construction were well-equipped machine, blacksmithing and wood-working shops. Here were in-

stalled power lathes, drill presses, bolt threaders, band and circular saws, planing mills and borers; so an immense amount of manual labor on the wood forms was eliminated and quick repair of equipment was made possible.

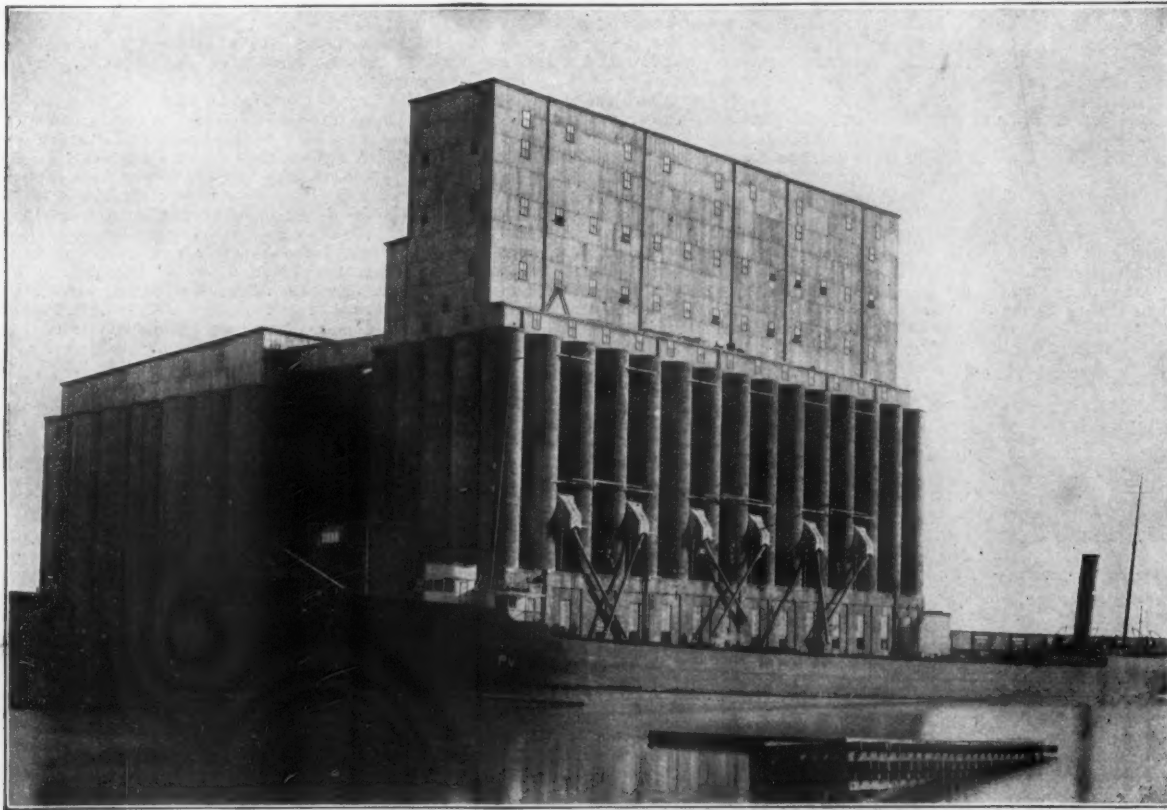
Portland cement arrived in Fort William in large cargoes and it was necessary to provide ample warehouse facilities to hold it until wanted on the work. A cement shed capable of storing 12,000 barrels of cement was connected with the various cement mixing plants by means of railroad tracks on which Vulcan locomotives and dump cars were operated. Sand and gravel for concrete was dredged from Lake Superior and unloaded from barges at a temporary dock 2,000 feet long by clam shell derricks. Traveling hoppers received these materials from a whirley and in turn loaded the trains of side dump cars. The concrete mixing plant consisted of four No. 2½ Smith Mixers and Lidgerwood hoisting engines located in two batteries at each end of the elevator. Four hoist towers and hoppers were constructed and necessary track was laid early, so that when the work was ready for concreting to begin, the mixing plant was completely installed. This plant handled during the course of construction 60,000 cubic yards of concrete and its efficiency is evidenced by the fact that as much as 800 yards was mixed and placed in a single day. As is well known the item



FOUNDATION AND SUBSTRUCTURE GRAND TRUNK PACIFIC ELEVATOR, FORT WILLIAM, ONT.



COMPLETED BINS AND STEEL FRAMES OF TRACK SHED AND CUPOLAS, GRAND TRUNK PACIFIC ELEVATOR, FORT WILLIAM, ONT.



FIRST SECTION OF 40,000,000-BUSHEL GRAND TRUNK PACIFIC ELEVATOR, FORT WILLIAM, ONT.

of lumber is one of the chief factors entering into the cost of concrete work. In this instance 2,000,000 feet of pine lumber was used for forms and moulds. The steel bars for reinforcing concrete in various parts of the work amounted to 2,500 tons and of a quality demanded by the Steel Manufacturers Association's specifications. Round bars were used in girders and floor slabs. Horizontal reinforcing in the concrete tanks consisted of flat steel bands and, in placing, sufficient lap was allowed to develop the necessary strength of the joints. In the concrete columns supporting the working house bins spiral reinforcing was used, which was made of one-half inch steel wire forming a helix of 41 inches diameter.

#### NEW PROCESS STONE COMPANY.

Syracuse, N. Y., Oct. 15—An artificial stone made by a new process, which brings out the bright granite effect, and cannot be distinguished from the real granite has become exceedingly popular with architects and builders in Syracuse. It is manufactured by the New Process Stone Company, of this city, which was recently incorporated, and many of the late imposing and beautiful public and private buildings have been built of this new

artificial granite. The officers of the company are: Dean E. Brown, president; Edward I. Rice, treasurer, and Howard P. Denison, secretary and counselor. Among the buildings erected of this material are: The Gurney Building, in which the new Empire Theatre has its home, on South Salina street, Syracuse; Masonic Temple, East Syracuse; new Masonic Temple, Baldwinsville, N. Y.; Lody's and Iroquois Buildings, Rochester, N. Y., and several churches in western and central New York.

#### NORTHERN WISCONSIN FAIR.

While the Northern Wisconsin Fair, held annually at Chippewa Falls, Wis., cannot be classed as a state event, it has nevertheless assumed such large proportions in recent years that it is at least worthy of mention in these columns. The Northern Wisconsin farmer, rather than suffer the inconveniences of poor transportation, besides a needlessly long journey to the state event at Milwaukee prefers to attend the northern event, hence its popularity.

"Every visitor a prospect" is a slogan which might well be used in describing the nature of the attendance, which is composed of wealthy farmers almost entirely, and when it is considered that the

"big" day of the fair this year, September 20th, brought together 39,000 people, little wonder it is that enterprising manufacturers include the event on their state fair schedule.

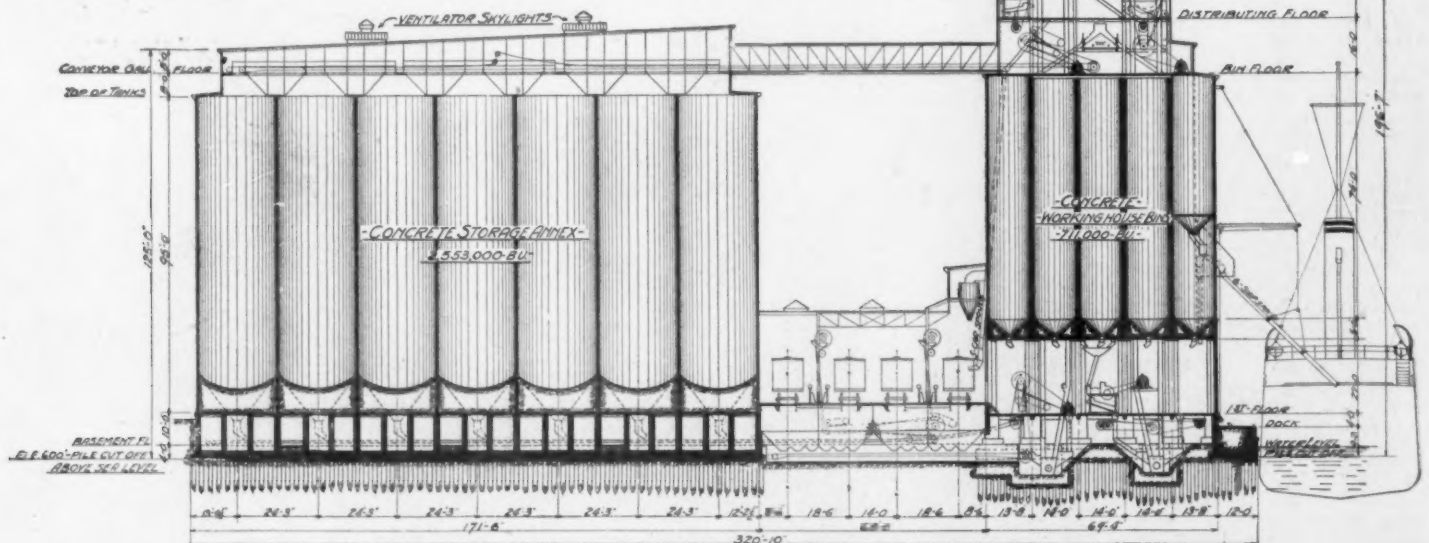
The exhibit the Chicago Portland Cement Company, manufacturers of the "Chicago AA" brand, was located in the machinery section and was visited by 2,350 farmers interested in the use of Portland cement, 38% of whom had successfully used cement for some purpose on the farm. The others, while not actually users, sought information and literature on the subject and contemplated making everything from a well-top cover to a silo when they "could get around to it." C. H. Greenleaf and J. W. Beckman represented the Chicago Portland Cement Company and were assisted by the representatives of the Clark Grain & Fuel Company, building material dealers, of Chippewa Falls, who handle the "Chicago AA" brand.

#### CONCRETE STATUES.

Denver, Colo., Oct. 13.—Mayor Speer has ordered for Denver copies of two of the most famous statues in the Louvre. They are Venus Genetrix and Diana of Versailles. They are being modeled by a noted Paris firm of sculptors and are scheduled to reach Denver about October 18.

They will be made of concrete. This material is being widely used in Europe by sculptors. Some of the finest sculpture in the famous Versailles gardens are made of concrete. It is considered the next best to marble and bronze.

The two first statues which have been ordered are to be in the nature of an experiment. Having just returned from a European trip and having seen many concrete statues, Mayor Speer thinks that they will prove artistic enough for the most exacting.

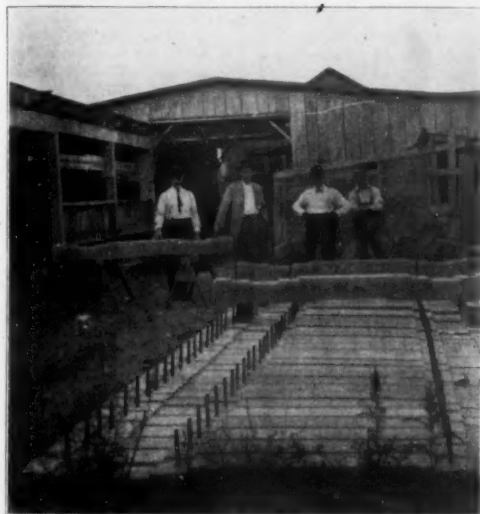


SECTIONAL VIEW SHOWING THE CONCRETE FOOTINGS.



### CONCRETE TIES STAND TEST.

Concrete ties made by the Consolidated Concrete Tie Company, of Cairo and Pulaski, Illinois, have not cracked after having been in the tracks of the



CONSOLIDATED CONCRETE TIE COMPANY, PULASKI, ILL., SHOWING TIES IN REAR OF PLANT.

Illinois Central railroad at Dongolia, Ill., for one year.

The pictures show the manner of reinforcing the Sneed concrete tie, a pile of ties in the rear of the factory and H. B. Eshelman of Pulaski, secretary and treasurer of the company. In the factory picture are shown from left to right, Vice-president D. W. Heilig, Secretary Eshelman, President J. R. Sneed and Foreman Oscar Milford.

Contracts have been made recently to place these ties in the Terminal Association tracks at East St. Louis, Ill., the Illinois Central at Carbondale and the Mobile & Ohio at Murphysboro as the product has passed the experimental stage.

The company, which is capitalized for \$100,000 under the laws of Illinois, is headed by J. R. Sneed, inventor of the tie. Mr. Sneed is also the general manager of the Pulaski Concrete Company, which manufactures all kinds of concrete building material.

H. B. Eshelman, the secretary and treasurer, is one of the liveliest wires in southern Illinois. In addition to pushing the concrete business he is cashier of the Bank of Pulaski. His service as postmaster in Pulaski caused him to be elected secretary of the Illinois branch of the National League of Postmasters. Besides these he is mayor of



H. B. Eshelman, SECRETARY AND TREASURER  
CONSOLIDATED CONCRETE TIE COMPANY,  
PULASKI, ILL.

Pulaski. He is a great fraternalist, having recently been accepted to take the Masonic degrees to the thirty-second.

### ILLINOIS STATE FAIR.

Springfield, Ill., Oct. 19.—Interest manifested by the large crowds which attended the Illinois State Fair at Springfield, September 29 to October 7, emphasizes the fact that the time is coming when a building show will be a part of this exhibition.

The Universal Portland Cement Company's scenographic model of its No. 5 plant at Pittsburg was easily a favorite with all visitors. This is the same exhibit that was shown at the New York and Chicago cement shows, and was given a good location in Machinery Hall. In addition to the scenograph, which gave the public an idea of the extensive factories and large shipments of the Universal people, there was on display a big screen portfolio of the convincing uses of concrete. Everybody at this exhibit was busy all the time, and it may be noted that the literature was given mostly to persons interested and not to curiosity seekers who generally get away with a large amount of valuable advertising matter. At this booth were Edwin Fuelbeam, O. A. Wakeman, F. C. Le Rowe, S. S. Gibney, all of whom were courteous to the public and sincere in giving visitors their knowledge of cement without being patronized.

The Lehigh Portland Company's representative held a levee all week and discussed trade conditions with the dealers and conducted a general publicity campaign. Downstate farmers received a good supply of valuable information as to the uses of cement, and a great deal of new business was lined up for Central Illinois retailers through the efforts of S. B. Chittenden, advertising manager, and L. A. Smith, of the Chicago office.

Miniature sacks of cement were given away at the space devoted to the Chicago A. A. Cement, where Fred J. Cassidy was active in pushing this product. Robert Crawford, advertising manager, was also on the ground.

E. C. Hodges, of Joliet, had on exhibition his concrete building blocks.

The White Hall Drain Tile Company, of White

Fig. 1.

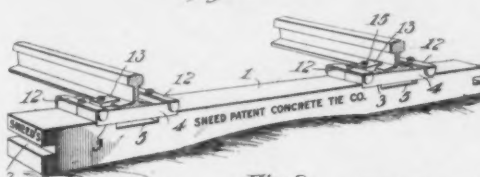
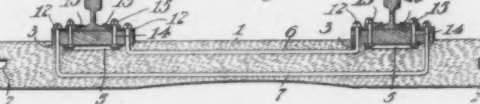


Fig. 2.



Hall, Illinois, was present with a large number of samples of their drain tile. This company is new in the field, having just recently completed its plant, but did a large business. The concern reports that the Chicago & Alton will use this tile along its right-of-way. Among other recent large orders was one from the Nutwood Drainage District of Jersey County, Illinois, for five cars. Representing this company were W. L. Halbert, H. C. Morrow, president and general manager of the White Hall Sewer Pipe Company, which is connected with the drain tile factory. C. Lowenstein, O. W. Strang, of White Hall, and W. I. Crowell, manager of the St. Louis Clay Products Company, which handles the White Hall Drain Tile Company's products, were in the same booth. All were continually busy.

The Barrett Manufacturing Company showed samples of its Amatite roofing.

"The Fisher Hydraulic Stone and Machinery Company, Rockford, Ill." This is the new way to reach the Fisher people. They have a fine location in the thriving Illinois city and are in touch with a plant in full operation, with one of their latest style No. A revolving hydraulic presses for making a non-absorbent concrete building material.

The Kankakee (Ill.) Cement, Tile and Products Company of this city has been incorporated with a capital stock of \$5,100, to do general cement and tile business. The incorporators are: Frank Miller, Dan P. Scott, Charles R. Conklin.

General Cement Gun Co., Chicago, Ill., has been incorporated to manufacture and deal in cement plastic materials; capital stock, \$10,000.

The Hennepin Cement Tile Company of Hennepin, Ill., has been incorporated with capital stock of \$4,000, to do a general cement and concrete contracting business. The incorporators are C. A. Mamic, L. A. Levers and William R. Medaris.

### ALWAYS IN DEMAND.

P. V. Goodmiller, architect of Stockton, Ill., is a general contractor and builder who is always in demand in his part of the State. The above pic-



P. V. GOODMILLER, STOCKTON, ILL. HIS CARPENTERS AND CEMENT WORKERS.

ture shows Mr. Goodmiller and his force of carpenters and cement workers.

The Hodges Cement, Tile and Brick Factory at Morrison, Ill., has been doing a big retail business in both drain tile and building blocks. Cement block houses are coming into favor in the city.

W. J. Alpine of Dixon, Ill., was awarded a contract to erect the new six story Franklin Life Insurance office building on South Sixth street for \$176,400. The structure will be 120x90 feet, and will be finished in reinforced concrete.

The Beloit Concrete Company, of Beloit, Wis., is manufacturing a new cement block called "Stonekote." The new material closely resembles cut stone, while it is only one-half as expensive.

The American Cement Machine Company, of Madison, Wis., has been incorporated with a capital stock of \$25,000 by John F. Culbertson, Helen E. Mandt and Cyril E. Marks.

A new concrete building ordinance for Milwaukee has been approved by the building code commission. While rather stringent provisions are imposed, it is believed that the measure will accomplish much, providing it is observed. The date of the manufacture of each concrete block must be carved in the material and three weeks is required for storage purposes in order to give the block time to dry. The building code commission decided that concrete blocks shall contain Fort-



H. L. BLACKMER, CONCRETE CONTRACTOR,  
MINONK, ILL.

land cement, sand or stone screening and gravel or crushed stone. Buildings composed of cement blocks must not exceed three stories and basement.

## NEWARK RETAILERS

(Continued from Page 28)

The Garlock-Utter Hardware Company at 33 E. Union street, Newark, N. Y., carries as a side line Atlas Portland Cement; hydrate and plaster of the Paragon Plaster Company of Syracuse; Akron sewer pipe, flue lining, fire brick and fire clay. It reports the demand for cement rapidly increasing in the neighboring agricultural districts. Frank Garlock, president of the company, reported trade good this year and prospects bright for an active fall season.

## LYONS RETAILERS.

Lyons, N. Y., Oct. 18.—B. F. Lockwood, proprietor of the Lyons Sewer Pipe and Wall Plaster Company, established his plant on Montezuma street in Lyons twenty-eight years ago. He has manufactured sewer pipe here from the beginning. Of late years he has stopped manufacturing plaster. Mr. Lockwood is a man of inventive genius, practical and of executive ability. He is the patentee of cement silos, cement burial vaults and cement curbing and gutters, which he manufactures and of which he has a large sale; also of cement bricks and cement blocks. His factory is a large stone building two stories in height. His builders supply yard is on the same ground on which the factory stands and has ample room for storing and handling Edison Portland Cement; plaster, hydrate and lump lime of the Akron Gypsum Company, and Charles Warner & Company of Wilmington, Delaware; sand, gravel, fire brick and sewer pipe of his own manufacture. He has a large trade among farmers, who he reports are buying more cement than in previous years.

Over a quarter of a century ago Henry Schreiber established the builders' supply yard at 166 Canal street, Lyons, N. Y. He is also engaged in contracting for large construction work. His warehouse has a storage capacity of 1000 barrels of cement, lime and plaster, and owns two teams used for hauling material to jobs. He handles Atlas Portland Cement; plasters from the United States Gypsum Company, and the Garbutt (N. Y.) Gypsum Company; hydrate and lump lime from the Kelley Island Lime & Transport Company; Atlas White Portland Cement and Keene's cements from J. J. Mandary, Rochester and Paragon Plaster Company, of Syracuse, N. Y.; sewer pipe and plaster of Paris from the Paragon Plaster Company, Syracuse; pressed brick from J. J. Mandary and the New York Sewer Pipe Company of Rochester; metal lath from the Paragon Plaster Company and J. J. Mandary, as well as vitrified wall coping and flue lining; Medina red stone and Warsaw blue stone for buildings; he manufactures and handles cement bricks and blocks; sand, gravel and a complete line of mason's supplies. A. K. Schreiber, manager of the business, reported the demand for cement from the farming districts increasing rapidly and trade this year excellent.

## CLYDE RETAILERS.

Clyde, N. Y., Oct. 18.—E. W. Dickie of Clyde, is one of the live wires in the builders' supplies trade and a large contractor for street work, private and public buildings and construction work of all kinds in Western New York. He established his business eighteen years ago. The warehouse and yards are located at 17-19-21 Ford street in Clyde, on the Erie Canal, the New York Central, the West Shore and the Rochester, Syracuse & Eastern railroad. Last fall he bought the building he now occupies which is two stories high and basement. It was used as a malt house when he bought it. He remodeled it for his own business, put in solid concrete floors and by next spring will have a show room in it completed, exhibiting every building material he handles. Adjoining the warehouse, which is 100 feet long by 80 feet deep, he has two lots, one 40x100 and one 25x60, where he stores in the open material which does not require to be under roof. Excellent shipping facilities are afforded by rail and water, having a good dockage on the canal in the rear of the warehouse. He manufactures porch columns, rails, spindles and facing blocks, cement blocks, cement bricks and will manufacture big concrete sewer pipe for conduits in the spring. The manufacture of concrete stoops has been especially appreciated in Clyde, having received this last season many orders in town for placing them leading up to porches in front of residences. He also put down in Clyde many thousand feet of concrete sidewalks, and in the township built two small concrete bridges over streams. He handles Universal and Penn-Allen Portland cements, White Atlas and White Medusa Portland cements; George W. Park & Sons' Syra-

cuse "Adamant" plaster and the product of the Akron Gypsum Company of New York; hydrate and lump lime of the Woodville Lime & Cement Company of Toledo, and the Paragon Plaster Company of Syracuse, from the Robinson Clay Products Company of New York City he buys sewer pipe, drain tile, fire brick and fire clay; common and pressed brick from the Paragon Plaster Company of Syracuse, and the Composite Brick Company of Rochester, which also furnishes him with metal lath made by the Cleveland Expanded Metal Lath Company, and hy-ribbed metal lath from the Composite Brick Company; from the Paragon Plaster Company of Syracuse, expanded metal for reinforcing concrete, made by the American Steel & Wire Company; roofing of the William E. Ebbets Paper Company, of Syracuse; crushed granite from the Monarch Mining Company, Jersey City, N. J., which he uses in the manufacture of porch columns, etc., and also handles crushed granite from the Crown Point Spar Company of New York, and sand and gravel. He uses a large number of teams for hauling material to jobs. Mr. Dickie reports business excellent this year and concluded by saying "I could not possibly have been more busy and filled my orders promptly. There is every indication for an exceptionally brisk fall trade."

## PITTSBURGH RETAILERS.

Pittsburgh, Pa., Oct. 15.—Pittsburgh retailers had a very bad handicap all through September in the matter of weather. Continued heavy rains made profitable street work an impossibility. In other respects retailers found somewhat more business than any month for some time. Considerable fall building of the smaller sort was started. Yards found more inquiries from contractors for lath and material needed to finish up summer building jobs and think probably the price can hold up pretty firm for this reason. General trade, however, did not show the spurt it often does when fall weather is fine. There is a large amount of street work going on in Pittsburgh in addition to some very heavy contracts for railway repairs, etc., but this is pretty well cornered, so that the general trade gets comparatively little benefit from it. Retailers are quite enthusiastic over the prospects of Pittsburgh's "coming back" next year, as the tremendous energy that is being put into the boost movement ought to accomplish wonders for this city.

D. J. Kennedy & Co. are running all their plants steady and report a fair business, but no boom in any line. The brick market is decidedly up and down, they announce. Building materials in general are just fair sellers. Lath is an exception to this rule, and the company is selling a big stock of hemlock lath at about \$4.50 per M. Prices on lath seem to get higher as wholesalers are holding up on this well.

The McQuaide Contracting Co. is being congratulated on all sides because it has secured the first big Pennsylvania state road job let by the new highway commissioner, E. M. Bigelow. The company will build sixty miles of state road between Ligonier, Pa., and Bedford, Pa., using the Ligonier crushed stone for the job. The company is also bidding on several orders for streets and it is expected that the contracts will be awarded this week.

Houston Brothers Co. have had a pretty busy fall at their Lawrenceville headquarters, and have been making satisfactory shipments from their different plants. Their brick business has been very good and they have also a large amount of general builders' supplies.

Miller & Coulson are turning out about 4,500 building blocks a day at their plant at Salineville, Ohio, and 2,800 a day at Reynoldsville, Pa. These blocks are 8x8x16 inches. In spite of this large output, the company cannot fill its orders without buying a considerable quantity. Its officials report trade in ordinary building materials rather slow. The company is operating a paper cement bag mill at Monongahela City, Pa., which is rushed with orders and has recently secured some of the finest contracts taken this year. Miller & Coulson are handling the entire output of the Ohio Clay Products Co. this year.

The West Penn'raction Co. has been making extensive improvements to its lines all summer and is arranging to build a spur from West Newton, Pa., to Scott Haven, Pa., and another from Greensburg, Pa., to New Alexandria, Pa., and thence to Latrobe, Pa. Contracts will be awarded shortly and a large amount of filling and general road work will be let.

Pittsburghers have a lot of confidence in the newly appointed Pittsburgh Industrial Development Commission, which has launched a campaign to raise \$250,000 to be used at once in getting new industries, better freight rates, etc., for Greater

Pittsburgh. The men identified with this movement are leaders in every line of Pittsburgh's business, and immense things are fully expected to be accomplished by the commission within the next few months. For this reason dealers in builders' supplies are more hopeful of the future in this immediate district in spite of the general unfavorable business forecast for next year than they have been for any time since the 1907 panic broke. As members of the general committee, which will act with the Commission, the following well-known builders' supply men are named: Hamilton Stewart, of the Harbison Walker Refractories Co.; S. M. Kier, of the Kier Fire Brick Co.; W. D. Henry, of the National Fire Proofing Co.; J. H. Rodgers, of the Rodgers Sand Co., and R. L. McKallip of McKallip & Co.

## CHICAGO RETAILERS.

Chicago, October 21.—The builder's supply business here is experiencing the last bunch of good orders that will come its way until spring rolls around again. The trade is selling a lot of material, but it is to the builders who are anxious to get their jobs done before the cold weather effectually breaks up building operations.

Prospects are very good and the dealers think that there is little need to worry about the future. This month they are busy on immediate shipment orders, and some are having to stock up on several lines in order to keep up with the demand. It is thought, however, that this demand will not last and that before another month there will be little doing unless the threatening weather holds off and the builders are able to go ahead with the jobs that are already started.

One thing that the dealers note with feeling is that there are no strikes to worry them at the present time. All the strikes that have been running through the summer have been settled and no new ones have broken out.

G. A. Whitehead, purchasing agent of the Chicago Builders' Specialty Company, stated: "Business is good and we think that the building trade is in very good shape. We have just shipped three Marsh mixers to Montevideo, South America, for Swift & Co., for use in building a new plant that this company is about to construct there. We also have an order for a mixer to be sent to Cuba, and the local trade is in correspondingly good shape. Contractors are trying to get as much done as they can before the cold weather sets in, and our business is going right along with the contractors. Operations are expected to be heavy this fall."

The American Concrete Mold Company, a newly organized concern, reported that business was very satisfactory and that they expected to have a good trade this fall with their molds.

The William E. Dee Company, extensive manufacturers of sewer pipe and dealers in building materials, stated that business was good and that prospects were bright. This year with them has been very satisfactory, and although prices on some lines were not as high as could be expected, the general trade was such that they have no complaint to make.

The Craig Building Material Company reported that business was about the same as last month and that they did not expect very much trade for the next few months, as the cold weather would put a stop to building operations.

The Lake Building Material Company said that they were busy and that prospects were as bright as could be expected at this time of the year.

Meacham & Wright reported business good and said they were busy and expected to be for some time.

C. H. Stebbins, of the Lake Shore Sand & Gravel Company, stated: "Business is pretty good and we believe that fall trade is not yet over and that we will have some good orders. Prices are just fair and have not changed since last month."

The Standard Material Company is busy and says that there are a lot of good things in sight for the dealers this fall. They are selling a lot of lime and cement.

The Templeton Lime Company reported that conditions were about the same as last month and that prices had not changed.

The Chicago Building Material Company reported that business was about the same as last month and that prospects in their line were just as good as could be expected at this time of the year.

The McLaughlin Building Material Company said that business was good in most lines. The demand has slackened somewhat during the past month owing to the approach of cold weather, but business was expected to keep up for another month at least.



## Side Talk

*in which the Advertiser tells his own story*

The American Locomotive Company, of New York, reports the following orders received during the past week for steam shovels and locomotives: Chickamauga Quarry Construction Company, steam shovel; Western Pacific Railway Company, rotary snow plow. The Montreal Locomotive Works received the following orders: Roger Miller & Son, Toronto, four wheel saddle tank locomotives; P. Lyall & Sons, Limited, Montreal, four wheel saddle locomotives.

### GREAT LOCOMOTIVE WORKS AT DAVENPORT.

Eight years ago the Davenport Locomotive Works were established in this city, turning out locomotives for stone quarries producing crushed rock. In the larger quarries these locomotives are used for switching purposes, taking rock from the steam shovel to the crusher. They are now in general use in plants of industrial companies throughout the country, used for switching. As an instance, a fifty-ton four-wheel connected saddle tank locomotive has just been delivered to the P. Shoenhofen Brewing Company, at Chicago. Twelve of these locomotives are in service at the dam across the Mississippi river at Keokuk, Iowa. This dam is the biggest water power undertaking in the world, and is near completion. These engines haul the cars containing the concrete, and take the crushed rock from the quarries on the Illinois side of the dam.

J. G. White & Co., of New York, one of the largest engineering and contracting firms in the country, are putting in a big water power project in lower Tennessee, and are using seven of these locomotives. The Chicago Portland Cement Company operate three of the Davenport locomotives in their quarries at Oglesby, Ill., used to switch rock from the quarries to the mill. In fact, the Davenport locomotives are operated in all quarry and mining regions of the country; they are used by clay product manufacturers; sugar producers in the southern states, Cuba, South America and the Hawaiian islands; by railroad contractors, steel mills; lumber, sand and gravel industries, and used on short railroad lines. So great has the demand for these engines become that the Davenport Locomotive Works are the largest in the country supplying locomotives in these particular fields.

The plant is located on the C., R. I. & P. and C., M. & St. P. tracks, with connections to the C., B. & Q., thus being centrally located and possessing excellent shipping facilities to all points, especially to the South and West. This concern holds 46 acres of land, the new buildings recently erected covering 5 acres on this tract of land, which is adjacent to the old shop, leaving ample room for expansion in the future.

The plant consists of boiler shop, foundry, new erecting and machine shop, new blacksmith shop, woodworking shop and new power plant. With the new shops its capacity has been doubled, and it is now in a position to build all sizes and types of locomotives up to those having cylinders 19x26. Locomotives with cylinders of this size will weigh from 65 to 75 tons, in working order.

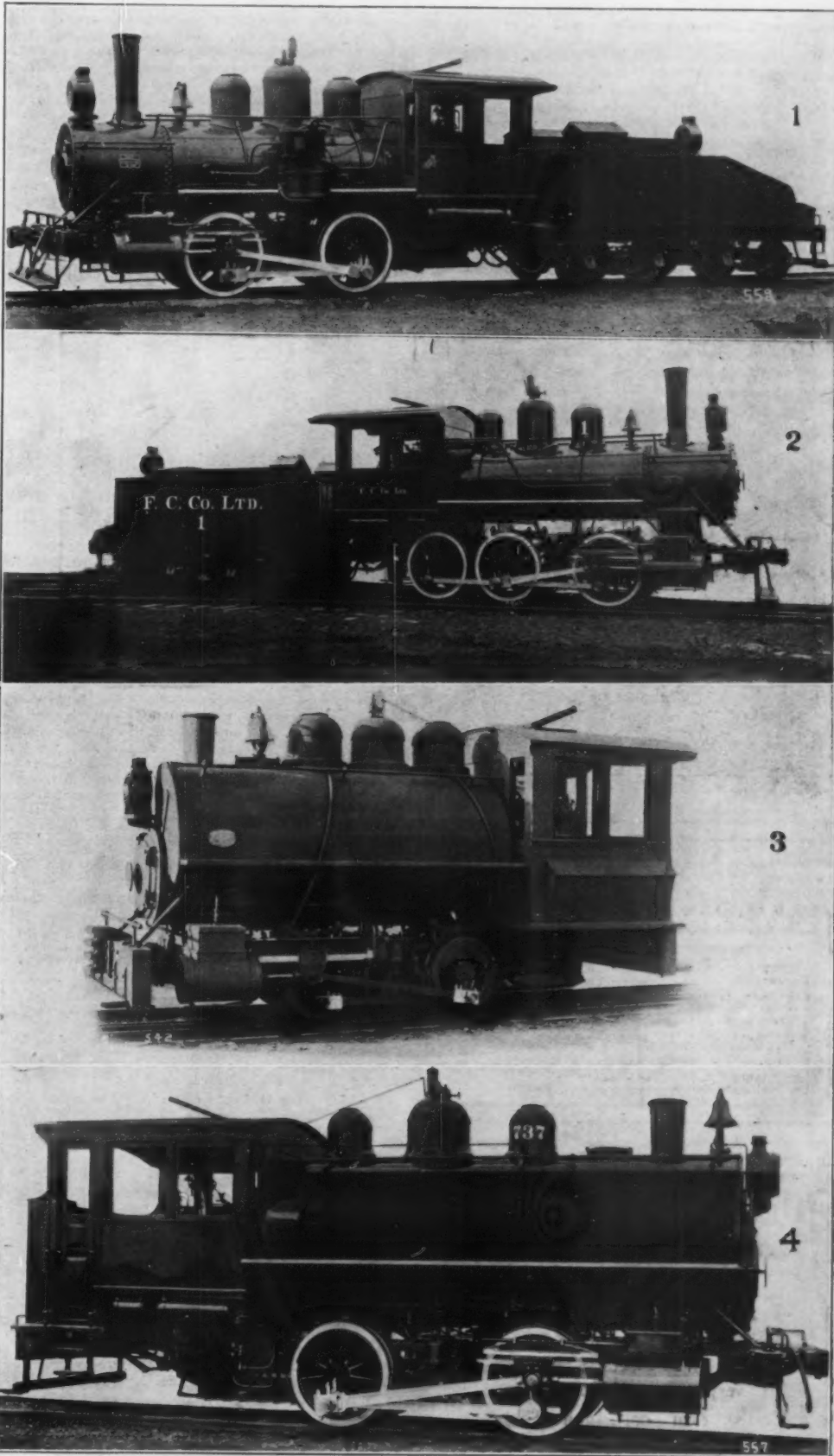
The boiler shop is 92x142 feet, and is equipped with one 20-ton crane and two 7-ton cranes, all three cranes traveling the length of the building. The flange work is done upon a hydraulic flange press, and practically all rivets are driven with hydraulic pressure. The shop is well lighted and is modern in all respects. It is also equipped with all the latest tools, enabling it to produce the very best boilers it is possible to build. The foundry building was erected two years ago for this special work and is equipped with one traveling 10-ton crane. The brass and gray iron work is done in this building. The blacksmith shop is equipped with steam hammers, drop hammers, spring hammers, forging machines and other tools that produce the highest grade of work.

The machinery and erecting shop are under one roof, and the building is 135x302 feet in dimension. A 40-ton Niles crane serves the erecting floor. The lighter tools in the first bay are "gang driven" by motors, while the larger tools in the second bay are driven by individual motors. The tools in this bay are served by a 10-ton crane, which travels the length of the building. In the machine shop a large number of new tools have been installed, and this shop embodies all the essential features to produce the highest grade of work. A feature in this building is the concrete floor, topped with creosoted wooden blocks, a floor especially adapted for handling the big castings. All its shops are modern and well lighted. Each shop has its individual heating plant, toilet rooms, drinking fountains, with other necessary comforts for the men.

Special attention is paid to designing suitable power for logging roads; in fact, it builds all sizes and types of rod locomotives and is prepared to

build any type of rod locomotives up to 75 tons in weight.

All the new buildings are modern, large and up-to-date in construction, and equipped with the latest machinery. Approximately 500 men are employed in them in active times. All of the machinery in this great plant is driven by electric power.



- (1) FOUR WHEEL SWITCHER USED IN SWITCHING SERVICE.
- (2) TYPE OF ENGINE USED BY PRESNO COPPER CO., LTD., CLOVIS, CAL., SWITCHING ORE CARS.
- (3) TYPE OF LOCOMOTIVE SHIPPED TO PETOSKEY CRUSHED STONE CO., PETOSKEY, MICH.
- (4) LARGE TYPE OF LOCOMOTIVE USED FOR SWITCHING IN YARDS OF INDUSTRIAL PLANTS. BUILT BY DAVENPORT LOCOMOTIVE WORKS, DAVENPORT, IOWA.

**ECLIPSE LOW CHARGING MIXER.**

The Standard Scale & Supply Company, manufacturers of the Eclipse Low Charging Concrete Mixers, are having increased success with their mixers and they report an increase in their sales, owing to the many fields open and available for their machines. Their Eclipse Mixers will mix mortar for brick laying, rough coat plaster, tar and stone for top dressing for road making as well as concrete for all classes of work.

The accompanying illustration shows one of their low charging mixers driven by gasoline engine all mounted on low down truck, mixing "Tarvia" for road work in Rutherford, N. J. The contractors, P. & P. Jannarone of Belleville, N. J., report having done this work a great deal more rapidly and with a great deal less expense than they could have done it with any other machinery or apparatus. The tar was melted in the usual way and poured into the drum from the low charging platform which is shown in the illustration, and thoroughly mixed with the crushed stone as shown in the cut. The cut shows two wheelbarrow loads of the mixed tar and stone as discharged from the mixer. The machine ran clear and worked rapidly without any trouble from the tar mixture hardening or caking around the blades. In order to keep the drum warm so that it would not chill the tar, a sheet iron fire box about 24 inches square and 12 inches deep was kept under the



ECLIPSE LOW CHARGING MIXER.

mixer drum with a small wood fire in it, and this answered all purposes and made a very cheap and effective outfit for this class of street paving work and was entirely satisfactory to the contractor as well as the city engineer.

P. & P. Jannarone are now using the mixer for concrete on another class of street paving work. On account of its general utility and ability to handle all classes of material it is an exceptionally desirable outfit for the general contractor. The manufacturers have recently closed some large and very desirable contracts for mixer equipments for bridge builders' use and on other classes of contracts.

**GOOD ROADS.**

The subject of good roads is one that is of patriotic interest, not only to the owner of vehicles but to every citizen, whether he is a resident of a city or a dealer in the country, and it is certain that this agitation will continue until the United States has roads equal to any country in the world.

In this connection it might be said that the Good Roads Machinery Company, of Kennett Square, Pa., has recently issued for the information of goods roads people an attractive book in sepia, showing its line of road oiling machinery for applying Tarvia and asphaltic oils and bituminous binders. The book tells the story of the marvelous advance that has been made in recent years in methods of securing good roads by the use of tar and oil, and shows how in every case the best results can be obtained by the use of their machinery consistent with the demands of traffic in any special instance or case, and points the way clearly to road superintendents and other officials having charge of these matters how to secure the best results.

**THE CROSS ENGINEERING CO.**

The Cross Engineering Company, Carbondale, Pa., has issued a very neat catalogue showing its varied products in a style most attractive and comprehensive to the trade. This company aims in this book to show the trade how completely it is equipped with modern machinery and all their facilities for manufacturing perforated plates, in steel, galvanized iron, bronze,

brass and other metals in any thickness on which they are able to work as to the diameter of a cylinder, flanged or plain, with slots for perforations on the ends and sides for bolts, rivets or other fastenings, as specified. They also furnish any style of gearing, pulleys and boxes as required. The perforated plate, the reader will bear in mind, is used for the most part in screens for sand and gravel. The catalogue is arranged in a logical and truthful way and really is an addition to the educational literature of this line. A copy of it ought to be in your hands if you are in need of any of this equipment.

**CRAIG SCREW BORE.**

David Craig, 70 Broad street, Boston, is the manufacturer of the Craig Reinforced Screw Bore, the purpose of which is to render portable concrete construction practicable. The screw bore is fixed in the slab by first inserting a master bolt into the hole which has been prepared and located in the mold. The wire screw bore is then imposed on the master bolt. The reinforcing rods, if used, are placed in position. The ends of the wire screw bores can be wound around the reinforcing rods. The mold is leveled and then poured full of concrete, which settles into all the corners and interstices. After the material has hardened, the sides of the mold can be removed and the master bolts taken out, leaving the reinforced screw bores correctly placed and imbedded in the slab or unit. The expense of forms necessary in monolithic construction is eliminated by using concrete slab lumber having the Craig Reinforced Screw Bore.

**MONEL METAL.**

The Ruggles-Coles Engineering Company, New York City, have taken over practically the exclusive sale in the United States and Canada of "Monel" metal, a product of the Bayonne Casting Company. This metal, which is an alloy composed principally of nickel with some copper, iron and manganese, has very high tensile strength and is practically non-corrosive. In external appearance, it resembles pure nickel and takes the same finish. Its qualities make it extremely well adapted for many purposes requiring a non-corrosive metal. In the form of sheets it is largely used for roofing, especially smelter roofs, skylights, boat sheathing, cooking utensils and chemical apparatus. As castings it is widely used in marine work for propellers, pump valves, cylinder linings and fittings subjected to superheated steam. Rolled into rods it is furnished for pump rods, steam turbine parts, and electrical apparatus.

**CLASSIFIED ADVERTISEMENTS**

Advertisements will be inserted in this section at the following rates:

For one insertion.....25 cents a line  
For two insertions.....45 cents a line  
For three insertions.....60 cents a line

Eight words of ordinary length make one line.  
Heading counts as two lines.

No display except the headings can be admitted.  
Remittances should accompany the order. No extra charges for copy of paper containing the advertisement.

**Extract from letter September 11, 1911, from The Bartlett Supply Co., of Detroit, Mich.:**

"—would also say that the little ad we ran in your paper on sale of brick press, brought us very quick results and at least ten opportunities of making sale of our press."

**Result of a five line ad run in our Classified Section August 22, 1911.**

**EMPLOYEES WANTED****WANTED.**

If you are in need of or wish to sell anything which comes under any of these classifications, write us. If you have something not coming under these classifications we will create one for you.

**QUARRY SUPERINTENDENT**

Wanted—Capable of taking charge of a small crushing plant and of giving the machinery the needed attention. Plant located near Atlanta, Ga. \$1,800.00 a year to the right man. References required.

Address 817, care ROCK PRODUCTS.

**SUPERINTENDENT.**

Wanted—Competent superintendent for granite rock crushing plant in South Carolina, with capacity of 400 tons per day. Permanent position. Good salary to man who can get results. Address with references, stating experience, etc., Charleston Portland Cement Co., Charleston, S. C.

**BRICK SALESMAN.**

Wanted—An experienced fire and face brick salesman, to take charge of plant just starting up in West Virginia. Must be a live wire. One with some capital to invest, preferred. Good place for the right man.

Address 823 Paul-Jones Bldg., Louisville, Ky.

**PLASTER MILL FOREMAN WANTED.**

We have a steady position for a good reliable foreman in our mixing plant. Must understand thoroughly mixing and manufacturing of different grades of plaster. Write giving references, etc., Stinson-Reb Builders' Supply Co., Limited, Montreal, P. Q.

**EMPLOYMENT WANTED****SUPERINTENDENT OR FOREMAN.**

Position wanted as superintendent or foreman of lime works, by a hustler of fifteen years' experience, capable of taking full charge of plant, including quarry, and can be depended at all times to keep things up to the minute, and in working order. Can furnish best of references from former employers and produce results.

Address RESULTS, Care ROCK PRODUCTS.

**SUPERINTENDENT.**

Wanted—Position as superintendent to construct or operate dredge boat equipped with centrifugal pumps, by a thoroughly experienced and competent man with references.

Address 815, care ROCK PRODUCTS.

**BUSINESS OPPORTUNITIES****PATENTS SECURED FOR INVENTIONS.**

C. L. Parker, ex-examiner U. S. patent office, 956 G St., Washington, D. C. Write for inventor's handbook.

**AGENCY FOR BUILDING MATERIAL**

Wanted, by a young man acquainted with dealers, architects and contractors in Chicago and central west. A manufacturer who would like to have his goods represented in that territory can secure the services of an energetic man capable of producing good results.

Address 809, care ROCK PRODUCTS.

**OPPORTUNITY—LIMESTONE PLANT.**

Eleven forties twenty-three miles Birmingham, Alabama. Ninety-nine eleven pure lime. Comprising railroad. Ever-flowing creek. All cash. Bargain. Write S. W. CATTS, Montgomery, Ala.

**PLANTS FOR SALE****TEN ACRES LIMESTONE.**

For Sale—Ten acres 98 per cent limestone and equipment complete for burning lime. On C. N. O. & T. P. Ry. Good market and great demand for product. Excellent location for cement plant. For particulars address TENN., care ROCK PRODUCTS.

**CRUSHING PLANT.**

One of the finest rock crushing plants in the West, finely equipped and in first class condition, running every day, plenty of business, a big money maker. Price \$50,000. Would take one-half in an improved farm, balance cash. Address

BOX 588, Kansas City, Mo.



**MATERIAL FOR SALE****MISSOURI LIME LAND FOR SALE.**

160 acres on west side Mississippi river 400 yards from landing and immediately on St. Louis-Memphis line Frisco railway. Practically inexhaustible supply analyzing 98% carbonate of lime. Elevated; no stripping; can be handled by gravity to railroad or river. Undeveloped. Accessible to St. Louis, Memphis and other markets. For particulars address THOS. B. CREWS, 602 Commercial Bldg., St. Louis, Mo.

**RUBBER CONVEYOR BELT.**

Two pieces rubber conveyor belt, each 215 feet long, 18 inches wide, 5 ply and 1/4" extra rubber on one side. New and at factory in Chicago. Make us an offer.  
A. M. BLODGETT CONSTRUCTION CO.,  
Kansas City, Mo.

**Gyratory Crushers**

We have for sale for quick Shipment Gates, McCully and Austin Crushers in sizes No. 1 up to and including No. 8 all in good condition and some nearly new. Elevators and Screens and power to drive if wanted. We have decided bargains in these just now.

WILLIS SHAW MACHINERY CO.

39 SO. LA SALLE ST., CHICAGO, ILL.

**Continuous and Double Air Space Building Bloesck**

Eighty  
Page  
Concrete  
Machinery  
Catalogue  
FREE.

FRANCIS MACHINERY CO., 4 Market St., St. Louis, Mo.

**Anchor Brand Colors**

For Mortar, Cement and Brick  
Brown, Black, Red and Buff  
Strongest and Most Durable

Manufactured by **C. K. Williams & Co.**  
Correspondence Solicited  
Easton, Pa., U. S. A.

**Switching Engine For Sale**

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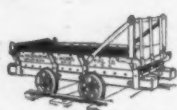
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Longest Bros. Company.

## BAGS.

Urschel Bates Valve Bag Co.  
West Jersey Bag Co., The

## BAG TYERS.

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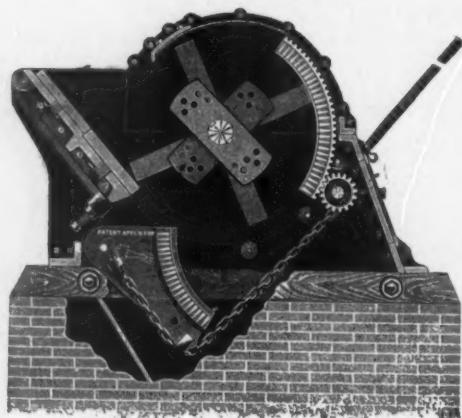
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Williams Patent Crusher & Pulverizer Co., St. Louis, Mo.  
Gentlemen: Your No. 6 Jumbo Crusher recently installed by us is handling about 100 tons per hour of crushed limestone from a No. 3 Gyratory Crusher, the largest pieces of which will average six inch cubes.  
The capacity of our elevator is 115 tons per hour and the machine easily overloads the elevator. We are now installing an elevator of double the CAPACITY FOR THIS CRUSHER. Your guarantee was fifty tons per hour from this machine.  
Your crusher reduces all of our material to three-quarter inches and finer, and the majority to one-quarter inch.  
We have been operating the machine about eight weeks and find same most satisfactory.  
Yours very truly, THE IOLA PORTLAND CEMENT CO., F. L. WOODS, Supt.

## MADE IN 8 SIZES—ALL PARTS ADJUSTABLE

Ask Iola Portland Cement Co., Texas Portland Cement Co., Southwestern Portland Cement Company,—or us. Write for Bulletin 12.

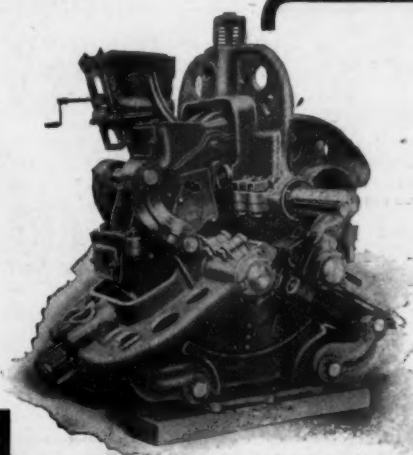
## WE ALSO MAKE LIMESTONE GRINDERS

# THE WILLIAMS PATENT CRUSHER & PULVERIZER COMPANY

**OLD COLONY BL'DG.——CHICAGO**

Tell 'em you saw it in ROCK PRODUCTS





# MAXECON

## Means MAXimum of ECONomy

Years of experience with the assistance of our hundreds of customers has found THE SOLUTION OF GRINDING HARD MATERIALS. The MAXECON PULVERIZER combines highest EFFICIENCY, greatest DURABILITY and assured RELIABILITY. Uses the LEAST HORSE POWER per capacity. Embodies the features of our Kent Mill with improvements that make it MAXECON.

**WE DO NOT CLAIM ALL of the CREDIT for this achievement**

We have enjoyed the valuable suggestions of the engineers of the Universal Portland Cement Co. (U. S. Steel Corp.), Sandusky P. C. Co., Chicago Portland C. Co., Marquette Cement Mfg. Co., Western P. C. Co., Cowham Engineering Co., Ironton P. C. Co., Alpena P. C. Co. Castalia P. C. Co., Pennsylvania P. C. Co., and many other patrons.

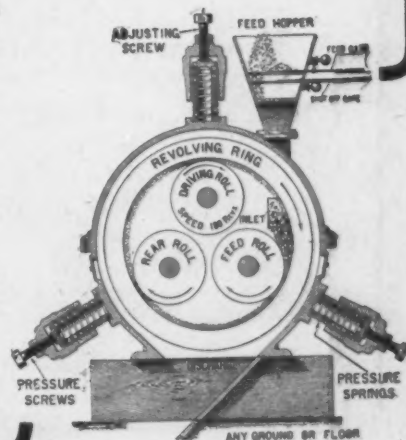
## THE RING WOBBLER

The FREE WOBBLING POUNDING RING instantly and automatically ADAPTS its position to the variations of work.

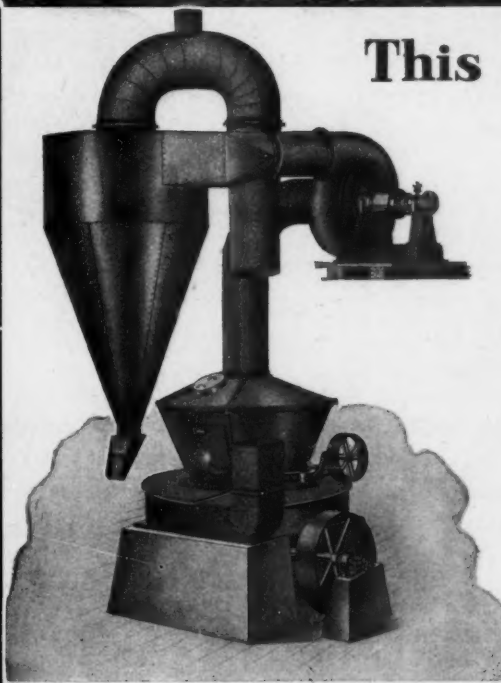
Its GRINDING ACTION is DIFFERENT than any other; besides the STRAIGHT rolling action of the rolls, the SIDE to SIDE motion of the ring makes the material subject to TWO crushing forces and DOUBLE OUTPUT results.

# KENT MILL CO.

170 BROADWAY, NEW YORK CITY  
LONDON, W. C., 31 HIGH HOLBORN  
CHARLOTTENBURG 5, WINDSCHEID STRASSE 31, BERLIN



## This \$4000.00 Raymond Pulverizer Saves \$70,000.00 a Year



This is only one instance of savings effected by the Raymond Pulverizing System which separates the pulverized material by automatic vacuum air suction, taking the ground product from the mill as fast as it is reduced to the desired fineness, and instantly conveying it to point of delivery or storage.

No matter if you desire an inpalpable powder the Raymond Mill will do the work quicker than any other. Let us tell you about all the other savings they have effected. The

## RAYMOND Pulverizing Air Separating SYSTEM

takes up less space, requires less power, grinds finer; does away with reels, screens and bolters that are so expensive to install and maintain, saves all the ground product, leaves no waste or tailings—no dust escapes to poison and choke the workmen, keeps the grinding room clean and sanitary, saves several handlings of material; and in many instances eliminates preliminary crushers, conveying and elevating machinery.

It is adjustable to any degree of fineness with a guarantee of always delivering a uniform product.

Consult our engineering specialists who specialize in pulverizing methods, and see if we can work out a more satisfactory and more economical method of reducing your products to powdered form.

Send for our Book "I" which explains in detail what our system is and how and where it may be used.

Read this book and you may find the way to divert some items from the expense account into the dividend account.

Raymond Pulverizing Systems are designed by our Engineering Specialists who fit them to conditions existing in your plant. They are installed with our absolute guarantee that they will do the service we claim and that you require or the sale is not made.

We design special machinery and methods for Pulverizing, Grinding, Separating and Conveying all powdered products. We manufacture Automatic Pulverizers, Roller Mills, Vacuum Air Separators, Crushers, Special Exhaust Fans and Dust Collectors.

# Raymond Bros. Impact Pulverizer Co.

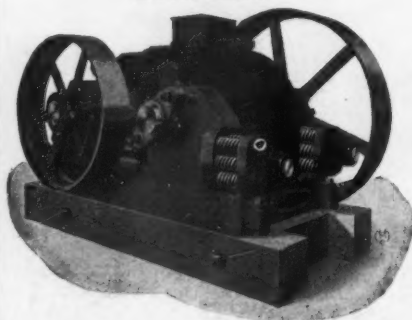
577 Laflin Street - Chicago, Illinois

## PLEASE CUT OUT THIS REMINDER

To write Raymond Bros. Impact Pulverizer Co., 577 Laflin St., Chicago, for their Book "I" on Modern Methods of Pulverization and Air Separation.

Tell 'em you saw it in ROCK PRODUCTS

## Crushing Rolls



**Will  
Pulverize**

## Are You Prepared For This?

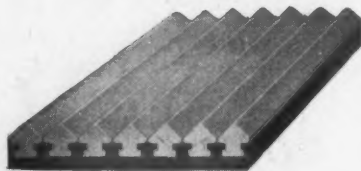
[Extract from "Rock Products" March Issue.]

Because of lectures and instruction given by the Agricultural Experiment Stations in Illinois, on the use of limestone dust as a fertilizer, the authorities of the stations believe that in 1911 the demand in this state alone will be for 100,000 tons of dust, or over 2,000 car loads. In the year 1910 450 car loads of dust were shipped from the crushing plant at the Southern Illinois penitentiary at Chester alone. Men connected with the prison industry still agree that the private firms cannot at present compete with the present price of 60 cents per ton on board cars at the prison. They have no doubt that the industry will become so extensive that it cannot be handled by the prisons and that the state will discontinue the manufacture and leave the industry to private capital.

Ask for Catalog D 4.

**Chalmers & Williams, Chicago Heights, Illinois**  
NEW YORK OFFICE—SINGER BUILDING.

## A Tempered Steel Jaw Plate for Blake Type Crushers



Canda Tempered Steel Crusher Jaw Plate

Patented March 31, 1908

The Canda Tempered Steel Jaw Plate for Blake Crushers is composed of Forged and Rolled Chrome Steel Bars, cast-welded and also mechanically interlocked into a backing of tough steel—and the wearing face is tempered to extreme hardness. We are equipped to supply both corrugated and smooth face plates for all sizes and makes of Blake Crushers.

The Canda method of cast-welding forged and tempered steel bars into a mild and tough Steel Backing, is adapted also to the construction of Cone Heads for Gyratory Crushers, Segments for Corrugated Rolls, etc., etc.

Our products in this line are sold with our special guarantee that they *will wear longer, give better satisfaction and, at our price, prove more economical than any others now on the market.*

— Send for Descriptive Pamphlet —

Represented by

J. F. Spellman, 202 Century Building, Denver, Colo.

George T. Bond, Easton, Pa.

George W. Myers, San Francisco, Cal.

## CHROME STEEL WORKS

CHROME, N.J., U.S.A.  
(FORMERLY OF BROOKLYN, N.Y.)

## AUSTIN GYRATORY CRUSHER

The World's leading rock and ore breaker.

The only self lubricating Crusher.

The only Crusher having double countershaft bearing.

Simple construction, correct design.

Thousands in use.

Plans and specifications furnished for any sized plant.

Send for Catalogue No. 17.

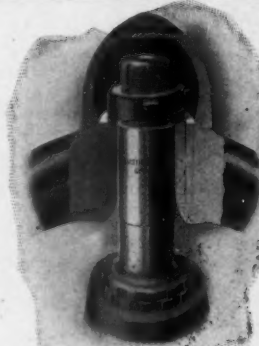
All experienced users recognize that the efficiency and durability of the suspension bearing as applied to Gyratory Crushers, depends upon locating the bearing at the point of least gyration or movement of the main shaft.

A perfect suspension can be made only by locating the bearing at the point where there is no movement of the shaft. That being a mechanical impossibility it follows that superiority is obtained in fixing the bearing at the point of least gyration of the shaft.

As the accompanying cut will show, the movement of the shaft at the point of suspension in the Austin Crusher is reduced to the minimum and practically eliminated. Consequently the highest possible degree of efficiency and durability is obtained.

Austin Manufacturing Co., Chicago

Mussens Ltd., Montreal, Can., Canadian Sales Agents.



New York City Office  
1682 FULTON BUILDING  
Hudson Terminal



## "KENT" CONTINUOUS MIXER

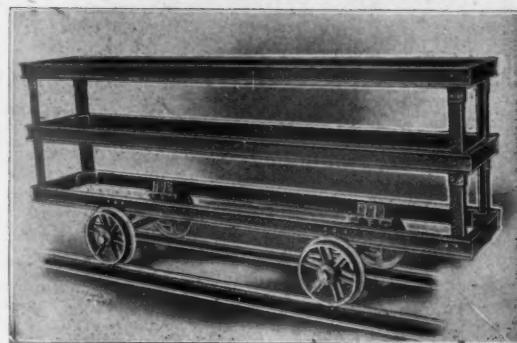
"The Mixer that measures and Mixes"

"You fill the Hopper, the Mixer does the rest"

Simple, reliable, economical, durable and moderate in price

Write for Catalogue and Prices to

**The Kent Machine Co.**  
306 N. Water St., Kent, O.



The "KENT" Block Cars, Transfer Cars, etc.

Tell 'em you saw it in ROCK PRODUCTS



# The Gardner Crusher Disintegrator and Pulverizer

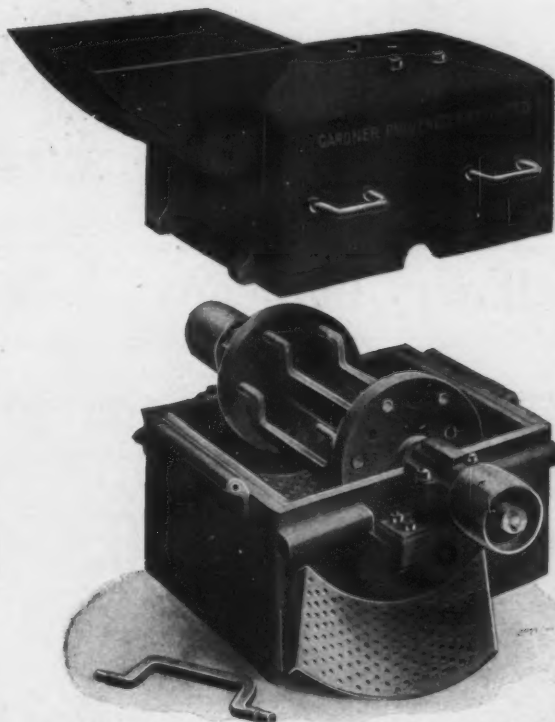
The great advantages of our CRUSHER are the following:

<b>High Productivity</b>	<b>Low Motive Power</b>
<b>Small Space Occupied</b>	<b>Strong Construction</b>
<b>Nominal Wear</b>	<b>Any Desired Fineness</b>
<b>Moderate Prices</b>	

**The Gardner Crusher  
Disintegrator  
and  
Pulverizer**

is adapted for

**Cement, Plaster,  
Quartz, Pyrites, Lime,  
Pozzolana Earth,  
Blast Furnace  
Cinders,  
Calcareous Stones,  
Porphyry, Granite,  
Emory, Corundum,  
Saggar from  
Potteries,  
Scoria, Hammerslag,  
Construction and  
Foundry Sand,  
Phosphates, Ochres,  
Bones, Sandstone,  
Silex, Bricks, Coal,  
Pitch, Glass, Enamels**



AN IDEAL PREPARATOR FOR THE TUBE MILL.

**The Gardner Crusher  
Disintegrator  
and  
Pulverizer**

has these advantages:

Is the most economical of all Crushers or Pulverizers.

Its price is very moderate.

Its capacity for pulverizing is enormous compared to its size and power required.

The Gardner Crusher requires no special foundations and can be put up anywhere.

Any fineness required can be obtained by merely changing the screens.

Its weight is very light, so the crusher can be sent to any remote country.

With the Gardner Crusher, in some cases, the complete equipment of a crushing plant will be the Gardner Crusher and the tube mill. With this kind of an installation the larger machines No. 2 or No. 3 would be used, eliminating the preliminary breaking machines.

## TRIALS

In order to give every facility to our customers, we have installed a Crusher for trials at our plant at 532 West 34th Street, New York City. You have only to send us a sample of your crude material and a sample of what you require when crushed. You should also specify the quantity that you desire per hour.

Our experienced engineer is at your disposal for any further explanation. *Send For Catalogue.*

# GARDNER CRUSHER CO.

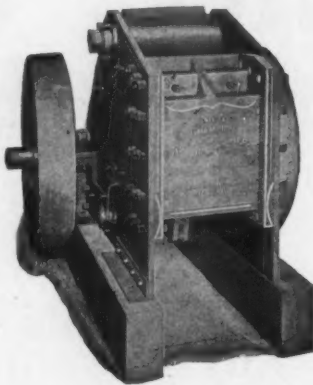
532 WEST 34th STREET

NEW YORK CITY, U. S. A.

Tell 'em you saw it in ROCK PRODUCTS

## Increase the Output and Efficiency of Your Quarry

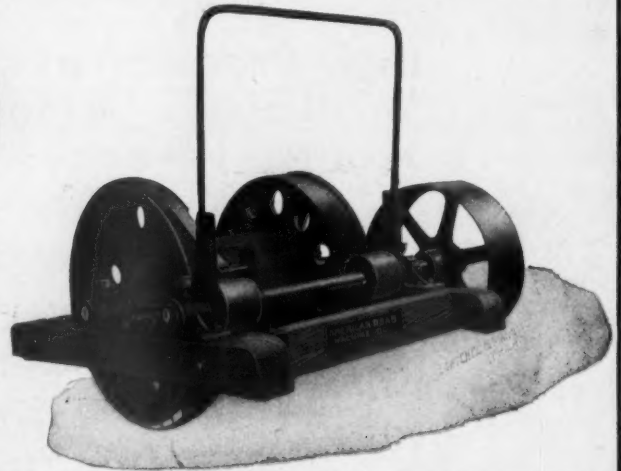
By using CHAMPION Rock Crushers, Elevators, Screens, Dump Cars, Hoisting Drums, Wire Cable, Conveyors, Bin Chutes, Engines and Boilers. Everything for the quarryman furnished at right prices. Our Dump Cars are Durable and Economical. Made in two sizes.



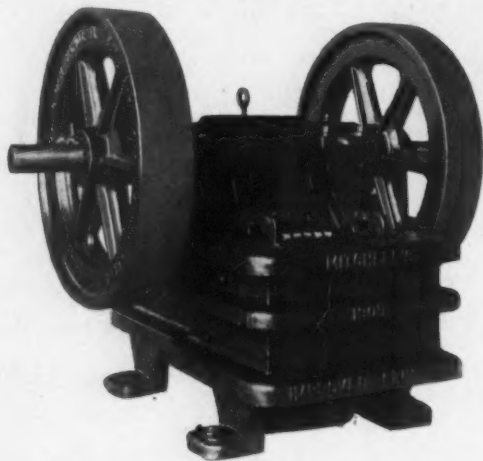
Champion Steel Rock Crushers are made in six sizes, from 75 to 600 tons daily capacity. We design and equip quarry plants of any capacity. Our Crushers do more work at less cost for repairs than any others. Catalog will interest you.



Count on quality when you consider Champion Quarry Machinery. We aim to furnish nothing but the best. Our winding drum is a low-priced, durable and economical appliance for drawing material from the quarry to the Crusher. Powerful and always to be depended upon.



**The Good Roads Machinery Company, Kennett Square, Pa.**



### There Are Reasons for Mitchell Crusher Superiority

Study the cross sectional view of the Mitchell Crusher and you will see at a glance why it is different from any other crushing machine. The motion of the movable jaw tends to produce a more uniform product with a very great saving in power. The crusher is adjusted in a jiffy to produce material in any size from 2 1/2" even as fine as sand.

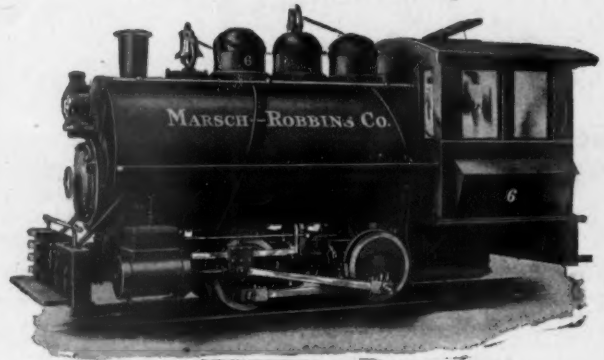
There are only 14 parts which greatly eliminates the possibility of wear and breakage. We can show you where you can profit by using a Mitchell Crusher.

**State your proposition clearly. Let us know what you have to crush, how fine you want to crush it, and what capacity you can use in a 10 hour day.**

You will be glad to have our 60-page catalog describing our 15 sizes. Send for catalog 7 R.

**EUREKA STONE AND ORE CRUSHER CO.**  
CEDAR RAPIDS, IOWA

## Do You Have Cars to Haul? The Davenport Locomotive Will Save Money



**Special Designs for Special Purposes  
Any Size, Any Gauge, Any Weight  
Write for Prices and Particulars**

**DAVENPORT LOCOMOTIVE WORKS**

DAVENPORT, IOWA

BRANCH OFFICES:

Chicago, 12 and 14 So. Canal St.  
Seattle, 617 Western Ave.

New York, 30 Church St.  
Minneapolis, 107 3d Ave. No.

F. H. Hopkins & Co., Montreal, Que., Canadian Representatives

Tell 'em you saw it in ROCK PRODUCTS





## Deep Blast Hole Drilling

Is accomplished more economically than by any other method with the

### "American" Drilling Machines

There is 40 years' experience behind these drills—they are standard. Where electric power is available, equipped with motor they form the most portable and economical drill for quarry use.

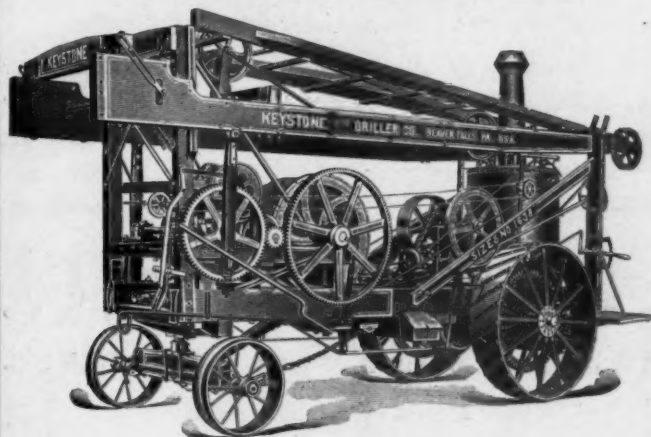
Equipped with any power they are backed by the experience and reputation of the world's oldest and largest builders of this kind of drilling machinery.

Tell us your blast hole requirements. We have 50 regular styles and sizes of machines for your selection, made in types to meet every possible condition of work. Write for our new catalog No. 105, the most complete "Drill-Hole" catalog ever issued.

## THE AMERICAN WELL WORKS

General Office and Works: AURORA, ILL., U. S. A. Chicago Office: First National Bank Building

## For Big Blast Holes KEYSTONE CABLE DRILLS



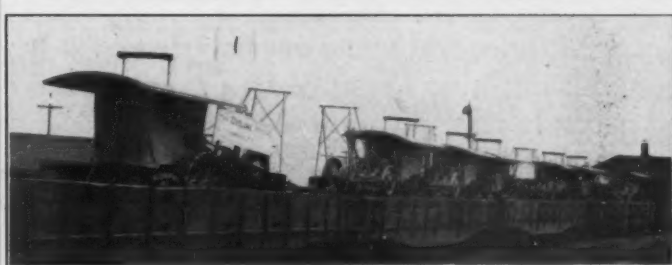
Catalog No. 4

### Keystone Traction Drill Co.

Monadnock Bldg.,  
CHICAGO

BEAVER FALLS, PA.,  
170 Broadway, New York

CARTHAGE,  
MISSOURI



Seven No. 14 Traction Drills.

THIS order was placed after trying out one of our drills for fourteen months in competition with seven machines of other makes; the seven other drills were discarded and Cyclones installed in their place.

If the Dolese & Shepard Company of Chicago found it profitable to discard the other machines and buy Cyclones you can save more than half the expense by buying Cyclone drills right from the start.

Why spend money experimenting when the other fellow has done that? We guarantee to drill more holes at less expense than any other drilling machine on the market. If you want us to prove it, just ask our competitors to meet us in your quarry.

### THE CYCLONE QUARRY DRILL COMPANY

New York Office, 50 Church St.  
Chicago Office, 419 Fisher Bldg.

ORRVILLE, OHIO



## HOWELLS' Celebrated Ball Bearing Heavy Geared Post Drills

For boring anything that  
an Auger will penetrate.

*Awarded Gold Medal, St. Louis.*

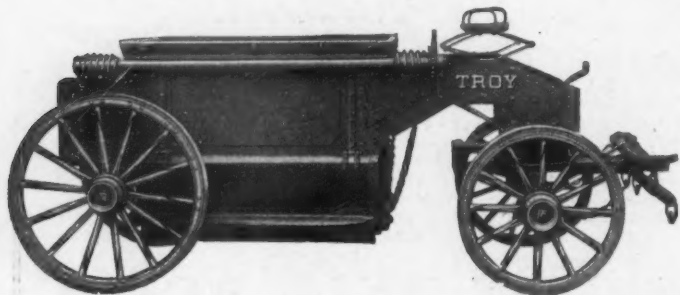
We make 40 different styles machines run by Hand, Compressed Air and Electricity for boring Fire Clay, Coal, Rock, Rock Salt, Gypsum and Plaster Rock. Send today for our handsomely Illustrated Catalogue.

### HOWELLS MINING DRILL CO., PLYMOUTH, PA. U. S. A.

(ESTABLISHED 1878.)

Tell 'em you saw it in ROCK PRODUCTS

## GET SATISFIED



### Have You Seen the New TROY?

See it once and you can't be satisfied with any other Dump Wagon. Teamsters, horses, owners—all are friends of the TROY Special. Let us tell you why you need it too.

*Get Catalog 2-P. and the price.*

**THE TROY WAGON WORKS CO.**  
101 E. Race Street, Troy, Ohio

**FARREL ORE AND ROCK**

# CRUSHER

USED IN ALL PARTS OF THE WORLD—LARGE RECEIVING CAPACITY—SPECIALLY DESIGNED AND CONSTRUCTED FOR HARDEST KIND OF WORK

**COMPLETE CRUSHING PLANTS OUR SPECIALTY**

• SEND FOR CATALOGUE •

**EARLE C. BACON, ENGINEER.**

FARREL FOUNDRY & MACHINE CO. HAVEMEYER BUILDING, NEW YORK

## SINGLE ROLL CRUSHERS

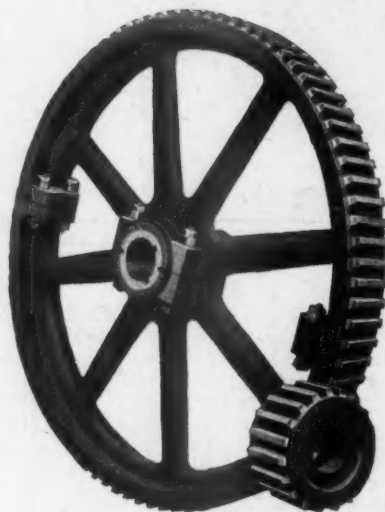
For Limestone, Phosphate Rock, Cinder, Etc.  
**CAPACITIES FROM 10 TO 200 TONS PER HOUR**  
More easily fed and makes less fines than either a jaw or gyratory crusher. Information and prices for the asking.

WE ALSO MANUFACTURE Double log washers, Ore jigs, Screens, All iron Elevators and Conveyors. Write for catalogue.

**McLanahan-Stone Machine Co.** Hollidaysburg, Penna.

# GEARS

## MACHINE-MOLDED



For the machine molding process an accurate pattern of but one tooth is required. This pattern or tooth block is mechanically spaced around the circumference of the gear, insuring each tooth being a duplicate of every other tooth. The result is a gear as near perfect as a cast gear can be made.

**CALDWELL - WALKER**  
Gears run smooth without noise and transmit full loads

without waste of power. Cost no higher than inferior gears.

Send your inquiry for prices on Screw Conveyors, Steel Elevator Casings, Pulleys, Bearings, Rope Sheaves, etc. We manufacture complete equipments of Elevating, Conveying, and Power Transmitting Machinery.

Catalog No. 34 should be in your files—ask for a copy.

**H. W. CALDWELL & SON CO.**  
**CHICAGO:** Western Avenue, 17th to 18th Sts.

**NEW YORK:** Hudson Terminal, 50 Church St.

**NUTTALL CUT OR PLANED GEARS**

**Increase Profits**

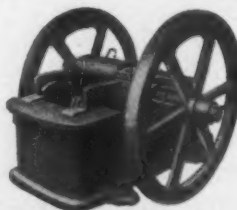
by curtailing power expense and adding to the efficiency of machinery.

From a mechanical view there is only one type of Gear to use—a Cut or Planed Tooth Gear, and practical experience has proven that Nuttall Gears can positively be relied upon under all conditions of service.

We have a proposition that will interest you.

*When in a hurry, wire*

**Nuttall—Pittsburgh**



**Lewistown Foundry & Machine Co.**  
LEWISTOWN, PA.

Builders of heavy duty crushers and glass sand machinery. Glass sand plants equipped complete.

WRITE FOR PRICES AND CATALOG.

Tell 'em you saw it in ROCK PRODUCTS



## Gravel Washery Recently Installed By Webster



For  
Gallagher  
Bros.  
Sand and  
Gravel Co.

Port  
Washington,  
L. I.  
Capacity  
3,000 Yards  
Per Day

For Supplying Washed Sand and Gravel for Some of the Largest Construction Contracts in New York and Vicinity.

Twelve screens are used, each 4 ft. in diameter by 16 ft. long, fed by two 24-in. belt conveyors, all driven by rope drive from 100-h. p. engine and by heavy riveted chain drives over steel sprockets. This entire equipment was designed and installed by Webster.

Send us your specifications and let us figure on your work. Write our nearest office.

### THE WEBSTER M'F'G COMPANY

NEW YORK  
88-90 Reade Street.

TIFFIN, OHIO

CHICAGO  
815-817 Fisher Bldg.

## LOOK! LISTEN!

### LEVIATHAN SPECIAL-BLACK CONVEYOR BELTING

is a new belt that has been on the market but a few months. The demand for it has been so extraordinary that we have not up to the present time been able to meet it.

### With our new factory

just finished for the exclusive manufacture of this belt, we are now in position to take all orders, and make prompt shipment. This belt is the wonder of the age for use in stone, sand and gravel plants.

### Think of it!

A canvas belt of the LEVIATHAN standard with a practically indestructible  $\frac{1}{8}$  inch coating on its face to resist the wear and tear of rough materials. Write us for further particulars.

## MAIN BELTING CO.

PHILADELPHIA CHICAGO NEW YORK BOSTON  
PITTSBURG SEATTLE

For Sale in Canada by the Main Belting Co. of Canada, Limited,  
41 Common Street, Montreal.

"It looks good on the face of it."



## GANDY

### See Where I'm Pointing?

This edge of the GANDY BELT will hereafter be painted green, in order that our customers may at a glance recognize "THE GANDY BELT."

We have adopted for our belting an additional distinctive mark, which consists of a green edge stripe painted upon one edge of the belting.

In addition every roll of Gandy Belting continues to bear our brand "THE GANDY BELT" and our Trade-Mark "A Coil of Belt and a Bale of Cotton."

Remember there is only one GANDY BELT, and that is the belt made by The Gandy Belting Company, Baltimore, Md., U. S. A.

Write to-day for sample and booklet.

### The Gandy Belting Company

744 Pratt St., BALTIMORE, MD.

New York Office: 88-90 Reade St.



Send for Catalog 25



### THE GENERAL CRUSHED STONE CO.,

So. Bethlehem, Pennsylvania,

have been using one of our Common Sense Elevators for six years—  
capacity 400 tons an hour.

THE C. O. BARTLETT & SNOW CO. CLEVELAND OHIO

## "R. F. & C." Solid Woven Rubber Belt

Eliminates every rubber belt defect. Send for pamphlet  
"A Wireless On Rubber Belting."

### W. H. SALISBURY & CO., Dept. R

CHICAGO

Established 1855

ILLINOIS

FOR IMMEDIATE SHIPMENT NEW AND REBUILT MACHINERY FOR  
CONTRACTORS AND QUARRY EQUIPMENT.

Two Rebuilt Western and Two Rebuilt New Era Elevating Graders, good as new.  
Twenty Rebuilt Western Wagons. Three 13-Ton Stone Bins. Two No. 2 Gates  
Crushers "D" Style. Rebuilt Jaw Crushers and Reversible Road Machines of  
Standard Makes.

HEADQUARTERS FOR Concrete Mixers, Wheelbarrows, Gasoline Engines,  
Gyratory and Jaw Crushers, Cars, Hoists and everything in Quarry Equipment.  
Write us for catalog and prices.

THE WILLIAMS CONTRACTORS' SUPPLY CO., Columbus, Ohio.

Tell 'em you saw it in ROCK PRODUCTS

## TISCO MANGANESE STEEL

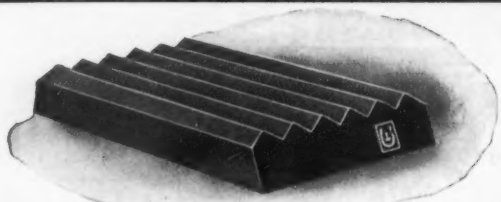
FOR

**Ball Mill Plates, Kominuter Plates,  
Conveyor Chain**

and the wearing parts of crushing and grinding machinery. The close grain and combination of hardness and toughness give it wearing qualities combined with strength unequalled in any other material.

*Does your banker use a TISCO Manganese Steel Safe?*

**TAYLOR IRON & STEEL CO.**  
High Bridge, New Jersey



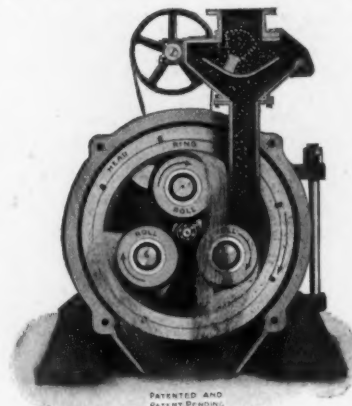
## TITAN MANGANESE STEEL

UNEQUALLED FOR WEARING PARTS OF JAW CRUSHERS  
GYRATORY CRUSHERS, CEMENT MACHINERY, COAL  
BREAKING MACHINERY, STEAM SHOVELS and DREDGES

SEND US YOUR INQUIRIES

**TITAN STEEL CASTING CO.,** NEWARK,  
N. J.

## Sturtevant Ring-Roll Pulverizer



### For Coarse or Fine Grinding

No Fans, Plows, Scrapers, Pushers, Shields or  
Screens, to wear out and take unnecessary power.

### Only Four Wearing Parts — (Ring and 3 Rolls.)

Replacing these make an old mill new. These wear from 6  
to 18 months

Submit your Crushing and Grinding problems to  
us — We make many kinds of Crushers, Rolls,  
Pulverizers and Screens

SEND FOR CATALOGUE

**Sturtevant Mill Co., Boston, Mass.**

## SCREENS

If you are interested in

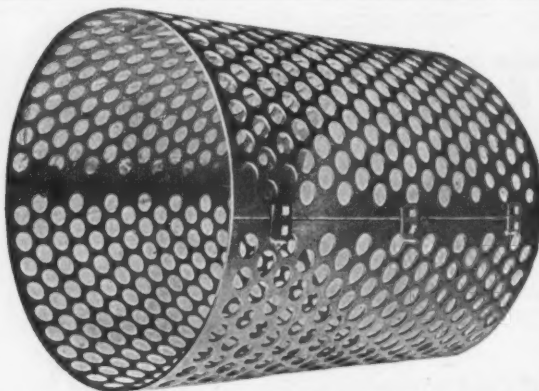
### Perforated Screens

and

**Have Tried All the Rest,  
Why Not Try the Best?**

Let us supply you with our screens, which  
are made from a special Hard Steel,  
especially adapted for stone, ore, gravel,  
sand, etc.

**We Solicit  
Your Inquiries**



**BECKLEY PERFORATING CO., Garwood, N. J.**

IT WILL PAY YOU TO INVESTIGATE

### PRICE, MATERIAL and DELIVERIES Are Right

Revolving Screens, Suspension Screens  
Trunion Screens, Shaker Screens  
Hexagonal Screens, Jump Screens

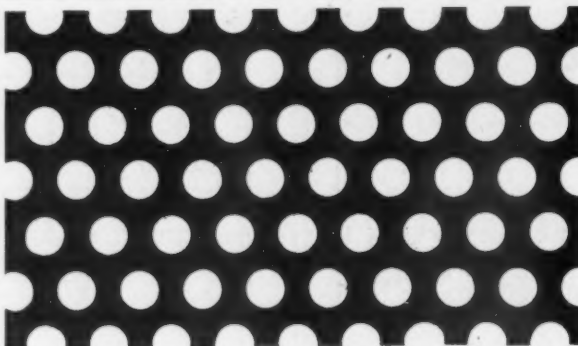
If you don't see the screen you are  
looking for here, ask for it. We make it.

**Send for  
Circular**

## PERFORATED METALS

Our Perforated Products have a repu-  
tation for accuracy and general high  
quality, our deliveries are prompt,  
and prices the lowest. This is  
why we number among our customers  
so many of the largest users of Per-  
forated Metals throughout the United  
States.

**WE SOLICIT YOUR INQUIRIES**



**CROSS ENGINEERING CO.**  
CARBONDALE, PA.

## SCREENS

OF EVERY DESCRIPTION  
FOR

STONE GRAVEL CEMENT  
COAL COKE  
ETC, ETC.

### SPECIAL HIGH CARBON STEEL

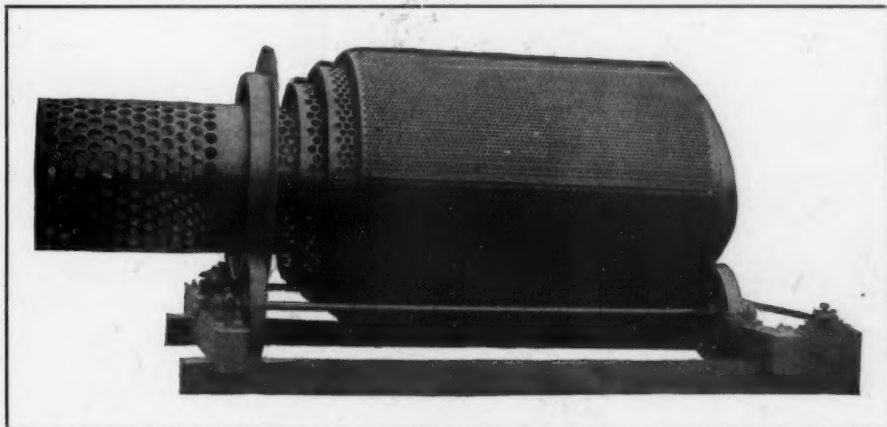
Adapted for the above operations, will be  
furnished at no greater cost than standard  
steel plates.

**SEND FOR ILLUSTRATED CATALOG**

Tell 'em you saw it in ROCK PRODUCTS



# JOHN O'LAUGHLIN'S SCREEN



The advantages of these screens are described in detail in a circular which WE WILL MAIL TO ANY ADDRESS. Mr. John O'Laughlin, the inventor, has designed many notable improvements in rock-drilling, quarrying, crushing and screening machinery, and uses these improved screens in his own crushing plants, which others have declared "to be the most perfect in existence in every detail." The O'Laughlin Screen is an important factor in the most modern and perfect stone-crushing plant.

made solely by Johnston & Chapman, is the

## ONLY SCREEN

on the market for wide-awake quarry-men and miners, who want to separate crushed granite, limestone or other minerals, gravel, sand, coal or coke. It will soon earn its cost in saving of repairs, and maintenance, and reduced power, and will do more and cleaner work than any other cylindrical screen of like area. No one can afford to keep old traps in use when the O'Laughlin installed

## NOW

will from the moment it starts give a better and larger product, and a big interest on your investment in continuous saving in cost of repairs, renewals, and power. For particulars address:

## JOHNSTON & CHAPMAN CO.

Corner Francisco and Carroll Ave., Chicago, Ill.

Perforators of Sheet Metals, Flat, Cylindrical, and Conical Perforated Screen Plates for Quarries, Mines, Reduction Works, Mills and all Industrial Purposes.

### BUFFALO WIRE WORKS CO.

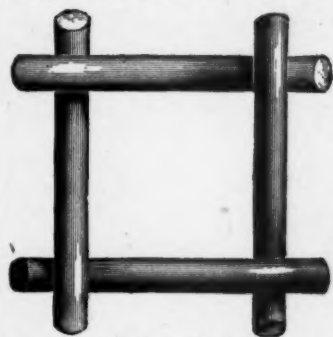
BUFFALO, N. Y.

We make

### Wire Cloth

From the coarsest to the finest, for all purposes,  
Also

WIRE CONCRETE REINFORCEMENT, WIRE WORK of all kinds, CORRUGATED WIRE "LATHING"

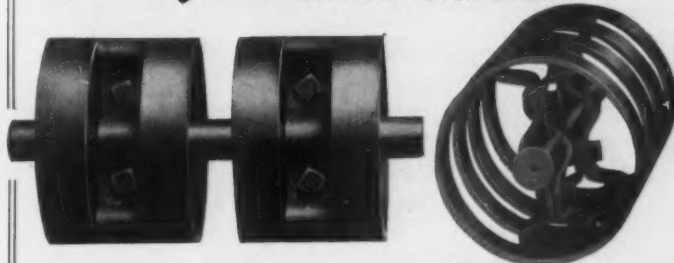


1-Inch Space, No. 4 Wire

Send for Our No. 416 Catalogue.

### WE EQUIP

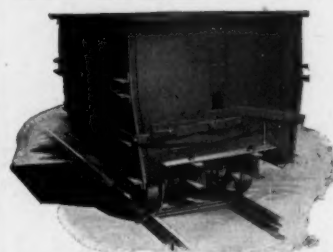
STONE CRUSHING PLANTS  
SAND & GRAVEL WASHING PLANTS  
BELT CONVEYOR MACHINERY



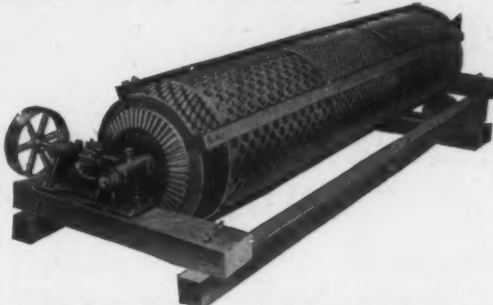
Our belt idlers are steel. They are the strongest, most durable, most convenient idlers made. They are rapidly replacing cast iron pulleys. Write for particulars.

RAYMOND W. DULL & CO. Aurora, Illinois

## CARS — SCREENS — ELEVATORS



Buckets  
Stone  
Skips



Switches  
Hoists  
Portable  
Track



We are prepared to quote you on anything for your Quarry or Gravel Plant. Before placing your order be sure and get our Catalogue 31-R, and also our Prices and Deliveries.

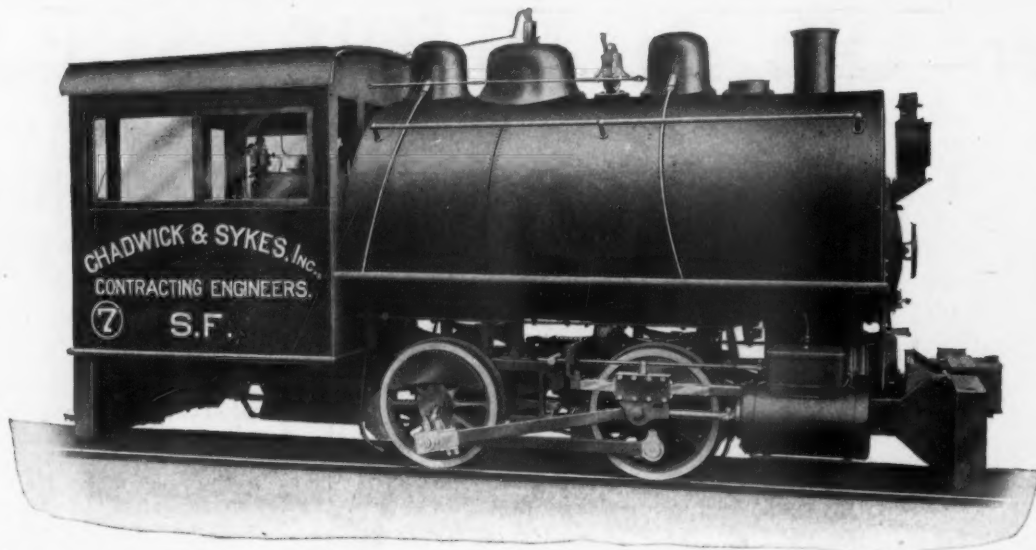
1679 ELSTON AVENUE

SACKETT---CHICAGO

If you are "from Missouri" or anywhere else "We can show you."

"SACKETT" High Quality Low Price Prompt Delivery

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## INDUSTRIAL LOCOMOTIVES

For contracting, quarrying, mining and switching about industrial plants, simple, sturdy, powerful and easily maintained locomotives are required. To build them right necessitates knowledge and experience.

We know how to build locomotives. We have built over 50,000 of them, of all sizes and types, for all kinds of service in all parts of the world.

Every piece of material entering into their construction must first undergo a test and meet rigid requirements. This is true of all our locomotives—both large and small.

Interchangeable repair parts are kept in stock at our works in Patterson, New Jersey, and in storehouses in Chicago and San Francisco.

Let us know your requirements.

## AMERICAN LOCOMOTIVE COMPANY

30 CHURCH STREET, NEW YORK

McCormick Building, Chicago  
2101 Beaver Avenue, Pittsburg

401 Board of Trade Building, Scranton  
41 Ottawa Bank Bldg., Montreal, Canada

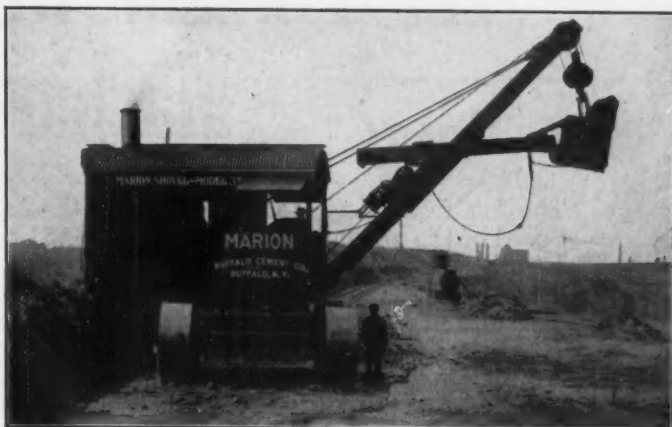
N. B. LIVERMORE & CO.; Salt Lake City; San Francisco; Seattle; Portland, Oregon

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# Marion Shovels for Rock Excavation

These shovels have been thoroughly tested and proven in all kinds of cement and rock work. They handle this most efficiently and economically. Write us and find out for yourself just how they do this.



Our Revolving Shovels are most popular where the output is limited, and economy is a vital consideration. One man can operate them.

These shovels can be mounted on railroad or traction wheels. They are built in three sizes, with dipper capacities, respectively, of  $\frac{1}{4}$  yd.,  $\frac{3}{4}$  yd., and  $1\frac{1}{4}$  yd.

Ours is the largest plant in the world manufacturing Excavating Machinery exclusively.

Let us figure with you before you order that new steam shovel!

STEAM SHOVELS   ELECTRIC SHOVELS   REVOLVING SHOVELS   DIPPER DREDGES   SCRAPER BUCKET EXCAVATORS

SEND TODAY FOR CIRCULARS 65 AND 67.

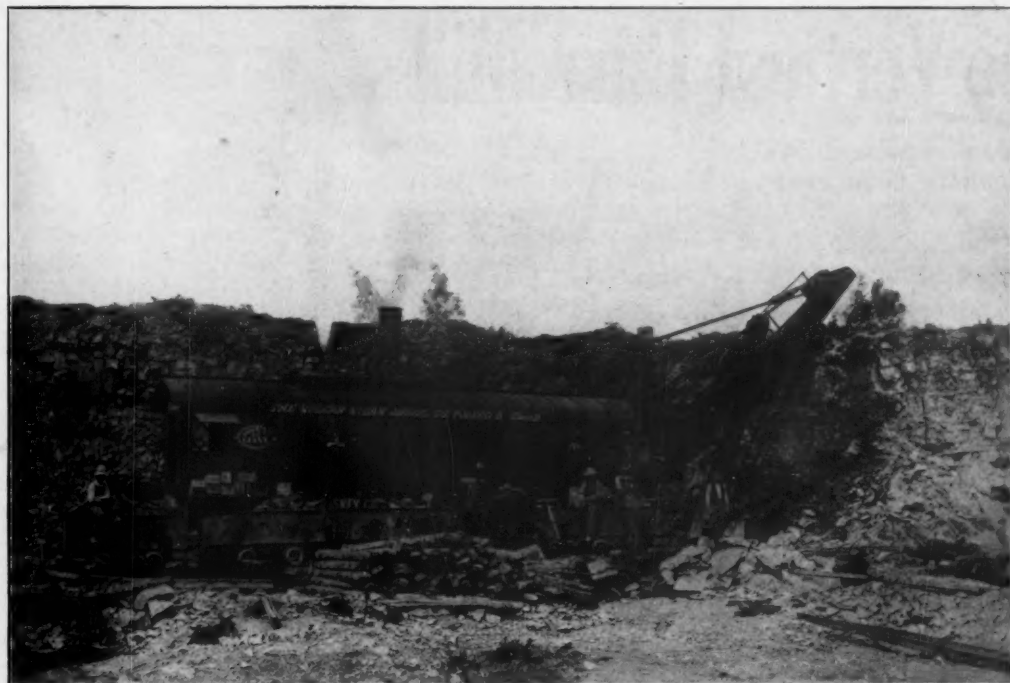
## The Marion Steam Shovel Company, Marion, Ohio

Chicago: 1442-3 Monadnock Block.

New York: 50 Church St.

Montreal: F. H. Hopkins & Co.

# QUALITY SHOVELS



THE SUPERIOR QUALITY of VULCAN SHOVELS is the result of years of experience.

There is nothing in excavating work that the VULCAN has not done.

The investment necessary to buy the best shovel for your purpose, demands an investigation. The VULCAN will be your first choice and your purchase.

VULCAN shovels are built in all standard sizes from 22 to 120 tons.

Revolving types in three sizes, 15 to 40 tons.

Railroad and Traction wheels, Steam or Electric Power.

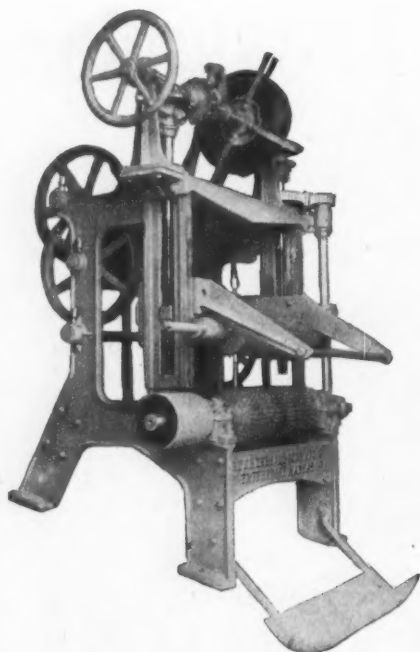
We also build special High-Boom Stripping Shovels, Locomotive Cranes and Dipper Dredges.

Our catalogue and knowledge of excavating problems is yours for the asking.

## THE VULCAN STEAM SHOVEL CO., Toledo, O.

EASTERN OFFICE, 50 CHURCH STREET, NEW YORK

Tell 'em you saw it in ROCK PRODUCTS



## Points of Interest Concerning The Ehram Wood Fibre Machine

The log feeds itself to the saw. As the log decreases in diameter the Speed of the log and of the feed **INCREASES AUTOMATICALLY**.

In other words, the Peripheral Speed remains constant.

The feed of the log to the saw is in direct proportion to the speed of the log. This automatic uniformity of feed **INSURES UNIFORMITY** of **FINE-NESS** in the **PRODUCT**.

No frictional devices are used, none being necessary.

All the working parts are planed. All of the gears are cut from solid steel.

All of the parts are interchangeable and numbered, so that duplicate parts can be quickly obtained and easily put in position.

The Saw mandril is extra heavy and made of the best crucible steel.

The journals are chain oiling. No machine can be more substantially built. Write for full information.

Okeene, Okla., June 14, 1911.

J. B. Ehram & Sons, Enterprise, Kans.,

Gentlemen:—Some time ago I received a letter from you asking how the wood fibre machine you shipped us is doing. Will say it is the best I ever used. In regard to any suggestions I could make as to how it might be improved, will say that I can make none, as it is O. K.

Yours truly,

SOUTHWEST CEMENT PLASTER CO.,

Frank Dodge, Sup't.

Manufacturers of Jaw and Rotary Crushers for Gypsum, Vibrating Screens,  
Hair Pickers, Wood Fibre Machines, Calcining Kettles,  
Plaster Mixers, Power Transmission

## The Enterprise Vertical Burr Mill

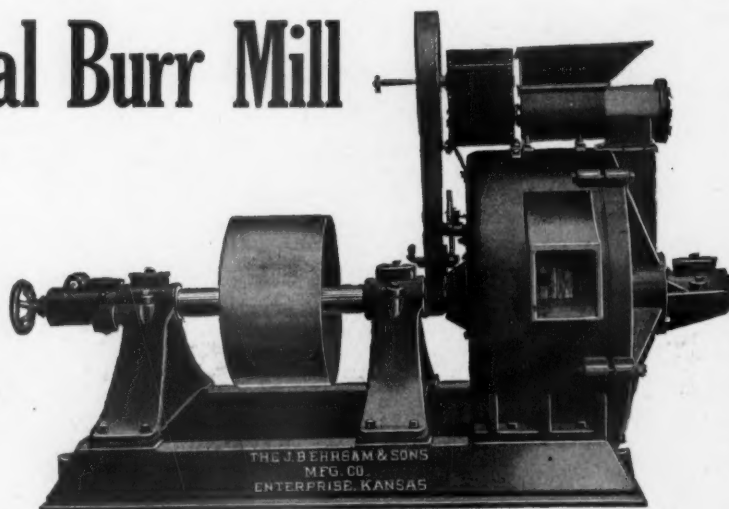
is especially designed for grinding gypsum, limestone, coal, coke, paint, rock, foundry facing, carbon, salt, and other similar substances.

It is **STRONG** and **DURABLY** built.

Has **INTERCHANGEABLE STONES**, which can be easily removed for dressing and replaced.

Is provided with our **POSITIVE CONTROLLABLE FEEDER**, which feeds an absolutely uniform stream into the mill at the required capacity.

**MANY OTHER  
ADVANTAGES.**



## The J. B. Ehram & Sons Mfg. Co.

Designers and Builders of

Complete Equipment for Plaster Mills

**ENTERPRISE, KANSAS, U. S. A.**

Tell 'em you saw it in **ROCK PRODUCTS**



# THE LINE OF PROGRESS



The Logical Lathing Material  
The Best in Hard Wall Plaster



Pyrobar Gypsum Tile

The Most Efficient and Economical Material Available for  
Fireproof Partitions, Column Covering, Etc.



A Gypsum Fireproof Stud—

Handled Just Like Wood Studding. Used in Connection with  
Sackett Plaster Board—An Ideal Combination, Affording a  
Light Fireproof Partition for Private Residences, Schools, Etc.

U. S. GYPSUM PRODUCTS  
embrace a line of material of  
rapidly growing interest value  
and utility in the building  
trades.

SACKETT PLASTER  
BOARD

U. S. GYPSUM WALL  
PLASTERS

U. S. GYPSUM FINISHING  
PLASTERS

ADAMANT EXTERIOR  
PLASTERS

PYROBAR GYPSUM TILE  
GYPSINITE STUDS

The U. S. Gypsum line—"The Line  
of Progress"—is unusually attrac-  
tive, and affords unrivalled advan-  
tages to the U. S. G. Dealer.

U. S. G. PRODUCTS AND METHODS  
WILL INCREASE YOUR BUSINESS AND  
PROFITS, AND ENABLE YOU TO GIVE  
GREATER SATISFACTION TO YOUR  
TRADE.

Our interests are mutual—justice to your  
own best interest requires that you give us  
an opportunity to prove up. We are will-  
ing to put our time against yours. Tell us  
to submit the proof.



Tell 'em you saw it in ROCK PRODUCTS

Improved  
Modern  
Lath



Fire-Proof  
Insulating  
Sound-Deadening

# King's Fibrous Plaster Board

Standard Size 32' x 36'

## THE RESULT OF "TRADE DEMANDS"

STRENGTHENED to stand the GREATEST STRAIN to which such material is subjected  
TOUGHENED to a woody consistency to stand NAILING AND HANDLING

SHIPMENTS made to dealers of STRAIGHT OR MIXED CAR LOADS

## KING'S FIBROUS PLASTER BOARD

CALCINED PLASTER  
MOULDING PLASTER  
FINISHING PLASTER  
WOOD FIBRE PLASTER  
NEAT WALL PLASTER  
SANDED PLASTER  
MARBLE DUST

## PLASTER BOARD NAILS

**SERVICE** The location of our works at the greatest railroad terminus in the East and our several warehouses enable us to make **Prompt Shipments at all times.**

# J. B. KING & CO.

Plaster Board Department:  
17 State Street, New York, N. Y.

**WAREHOUSES:**  
Boston, Mass. Providence, R. I.  
Chester, Pa. Hartford, Conn.  
Norfolk, Va. Buffalo, N. Y.  
Brunswick, Ga.

**WORKS:**  
New Brighton, Staten Island,  
NEW YORK

Tell 'em you saw it in ROCK PRODUCTS



## Dakota Plaster Co.

WE MAKE THE FAMOUS

"Black Hawk"

AND

"Dacotah"

**Hair and Wood Fibred Plaster**



Our Plaster is pure white; uniform in color; carries more sand, works easier and makes the hardest wall. Our Mill is thoroughly equipped with the most modern machinery, and we are always in a position to make prompt shipment. We guarantee every sack of our plaster.

**Dakota Plaster Co.** Rapid City, S. D.  
Black Hawk, S. D.

CUMMER CONTINUOUS PROCESS

FOR

**CALCINING  
GYPSUM**

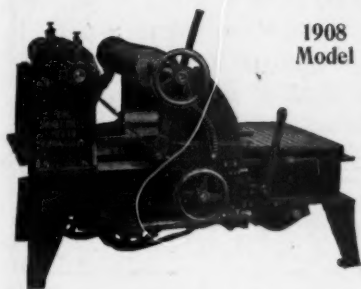
NO KETTLES  
USED

PLANTS IN  
OPERATION

Great Saving in Cost of Manufacture and Quality of  
Product Guaranteed.

**The F. D. CUMMER & SON CO., Cleveland, O.**

## The Shuart-Fuller Improved Fiber Machine



1908  
Model

Has an automatic, proportional increasing feed, which keeps grade of fiber uniform from start to finish, and holds machine to highest possible rate of production for the grade of fiber and number of saws. Does not begin with fiber and end with dust, nor fall off in rate of production on each log, from 40 to 80 per cent as do the ordinary non-increasing feed machines. Works logs up to 24x24 inches. No royalty string attached to sale. Pay no attention to misrepresentations of our competitors, but write for descriptive circular and terms to

**The Shuart-Fuller Mfg. Co.**

ELYRIA, OHIO

St. Louis, June 17, 1907.

THE SHUART-FULLER CO., Elyria, Ohio.

Gentlemen:—We are just in receipt of advice from our New Mexico plant wherein they state that the Wood Fiber Machine recently shipped by you is doing all that we have asked of it and running very fine.

ACME CEMENT PLASTER CO.,

By Jas. R. Dougan, Sec.

CROWING FOR



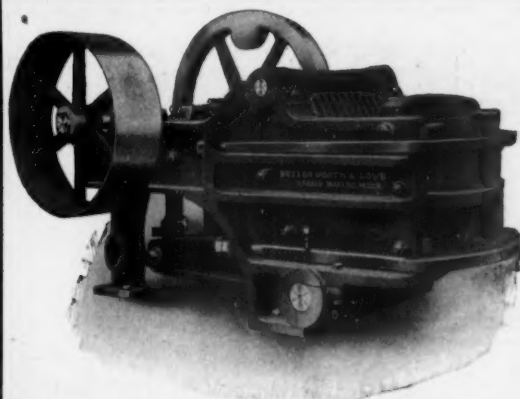
**PLYMOUTH PLASTER  
WOOD FIBER PLASTER  
PLYMOUTH FIREPROOF  
PARTITION BLOCKS  
PLASTER BOARD  
STEEL STUDDING**

THE QUALITY BRANDS

WRITE US FOR PRICES AND  
ADVERTISING MATTER

**Plymouth Gypsum Co.**

Fort Dodge, Iowa



Nippers—17 x 19", 18 x 26", 20 x 30" and 24 x 36".

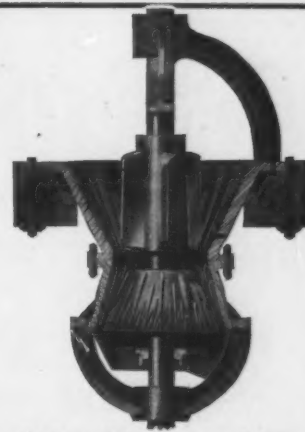
## Jaw and Rotary CRUSHERS

For all Rocks and Ores Softer than Granite

GYPSUM MACHINERY—We design modern Plaster Mills and make all necessary Machinery, including Kettles, Nippers, Crackers, Buhrs, Screens, Elevators, Shafting, etc.

Special Crusher-Grinders for Lime

**Butterworth & Lowe**  
17 Huron Street, Grand Rapids, Mich.



Crackers—5 sizes—many variations.

GET THE BEST

# Finest Line of Gypsum Machinery

MADE

**KETTLE CRUSHER NIPPERS**

ASK FOR CATALOG OF

**MOGUL NIPPERS. OPEN DOOR POT CRUSHERS**

Best Mills in the United States Have Them

**McDONNELL BOILER & IRON WORKS, Des Moines, Iowa, U. S. A.**

"Formerly Des Moines Mfg. & Supply Co."

Tell 'em you saw it in ROCK PRODUCTS

# PEERLESS

means without an equal and that is what our products are beyond the shadow of a doubt.

## Peerless Plaster-Board

The Best on the Market To-day

Peerless Plaster Board has no superior on the market today. Strength, durability, and uniformity in thickness with clean cut edges are its chief virtues.

Peerless Plaster Board finished with Peerless Plaster make a Peerless Wall. Builders' Supply Retailers say it is the best Plaster Board manufactured. If you are "from Missouri" write us today for sample and prices.

Write today for our  
PEERLESS PROPOSITION



Peerless Cement Plaster  
Peerless Wood Fibre Plaster  
Peerless Sanded Plaster  
Peerless Ready Finish  
Peerless Portland Stucco  
(Exterior Plastering)

We Ship Mixed Cars  
of Plaster and Board

Peerless Plaster Board comes in sheets 32 inches by 36 inches.

Peerless Plaster Board is a fire retardant and an efficient sound deadener.

Peerless Plaster Board is a non-conductor of heat and cold.

Peerless Plaster Board is an insurance against cracks, buckles, and lath strains.

Get in line with  
THE PEERLESS LINE  
WRITE TODAY

M. A. REEB, : Buffalo, New York

# THE NATIONAL RETARDER CO.

Mills at

Webster City, Iowa  
Port Clinton, Ohio

Successors to

The Chemical Stucco Retarder Co.

Webster City, Iowa

The Ohio Retarder Co.

Port Clinton, Ohio

The Binns Stucco Retarder Co.

Uhrichsville, Ohio

The same standard quality of retarder will be produced and marketed by the same people at the right price—only a change in name of corporation.

MAIL ORDER TO NEAREST MILL FOR PROMPT SERVICE

Tell 'em you saw it in ROCK PRODUCTS



# **= NIAGARA =**

Wall Plasters Have Greater Covering Capacity, Work Smoother Under the Trowel and Have Greater Final Strength

**Niagara Neat Cement**

**Niagara Sanded Mortar**

**Niagara Wood Fiber (Wood Pulp)**

in 100-lb. Jute Sacks and 80-lb. Rope Paper Sacks. Mixed Car Loads of Wall Plasters, Hydrated Finishing Lime, Plaster Board, Lath Plaster and Calcined Plaster for Finishing Purposes. These Products Mean Money to the Dealers in Builders' Supplies. Write today for prices.

**NIAGARA GYPSUM COMPANY**  
**BUFFALO, NEW YORK**

**ATTENTION! ARCHITECTS & DEALERS**

"IT SPREADS LIKE BUTTER"

Which? **="Wheeling"**

Why? **{ Better Walls  
Best Service  
Right Prices**

We want to make this, our tenth year in business, the biggest and best of all, both for our customers and ourselves mutually. Write us, Results will follow. Our Booklet "Better Walls" for the asking.  
WILL YOU JOIN THE "WHEELING" FAMILY?

**Wheeling Wall Plaster Co., Wheeling, W. Va.**

Tell 'em you saw it in ROCK PRODUCTS

## KING'S WINDSOR CEMENT FOR PLASTERING WALLS AND CEILINGS

Buffalo Branch, CHAS. C. CALKINS, Manager  
322 W. Genesee Street.

Not the hardest, but the toughest and best Wall Plaster made—Can be applied with less labor. Has greater covering capacity than any other similar material

J. B. KING & CO., 17 State Street, New York.

## NO OCCASION TO WORRY

IF YOU USE

### ILLINOIS LEATHER COMPANY'S HAIR

EITHER CATTLE OR GOAT

STRENGTH—UNIFORMITY—RELIABILITY

WRITE FOR SAMPLES AND PRICES

930 NORTH HALSTED STREET  
CHICAGO, ILL.

## PERFECTION IN BLOCK MAKING

If you wish to attain this you should combine these three important features:

### Wet Process, Face Down, Damp Curing.

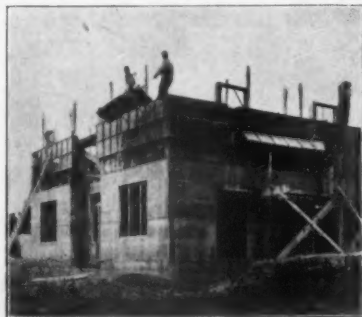
The PETTYJOHN INVINCIBLE Machine does this, and is the only machine that does. Tandem Invincible makes two blocks at once. Price \$65.00 and up. Single Invincible, \$35.00 and up. With our Triple Tier Racking System green blocks can be stacked three high direct from machine with inexpensive home-made rigging. Plans and blue prints free to customers. It economizes space, reduces off-bearing distance and above all insures slow, even, damp and perfect curing and bleaching.

Write for our latest edition of "Stone Making," a book of valuable data, just off the press—FREE.

### THE PETTYJOHN COMPANY

614 North Sixth Street. Terre Haute, Indiana.

## The MORRILL SYSTEM of STEEL FORMS Reduces Cost, Eliminates Waste of Lumber and Labor



Note the "Swing Up", 30 feet (15 plates), raised in 10 minutes.

### Simple—Rigid—Indestructible

Any man can put it up. Adjustable to any dimensions and any thickness.

### No Bolts—No Nuts—No Wires

All wedge connection—locked and unlocked by a stroke of the hammer. Adopted on hundreds of buildings for Real Estate Companies, Railroads, and Foreign Contracts.

Makes Poured Houses Possible. Investigate fully, it is worth your while. Write today for Catalogue.

### The Morrill Moulds Corporation

Suite 403-405 Carcoran Bldg., Washington, D.C.

## CLINTON METALLIC PAINT CO.

CLINTON, N. Y.

LARGEST AND OLDEST MANUFACTURERS OF

BRICK AND  
MORTAR

## COLORING

Be sure you get the genuine with the "Little Yellow Side-Label" on each package

Let us tell you about Side-Walk Black.

Tell 'em you saw it in ROCK PRODUCTS

## It Pays to Advertise in ROCK PRODUCTS

Seeing is Believing and  
Trying is Convincing

H. J. FULLER, President

M. B. FULLER, Vice President

E. J. FULLER, Secy & Treas.

Manufacturers of  
The Improved Fuller Wood Fiber  
Machine

The Fuller Force Feed Oil Pump

Fuller Metallic Packing  
For All Purposes

Special Machinery Designed  
and Built

The  
Shuart-Fuller Manufacturing Company  
INCORPORATED

Telephone 211

Elgin, Ohio, 5/9/10

RECEIVED  
ANSWERED  
1910

The Francis Publishing Co.,  
Chicago, Ill.

Gentlemen:

Replying to your inquiry of the 3d inst., we are compelled to say that the "Rock Products" is the best advertising medium for our line of business that we have been able to find, in fact we can safely say that 90% of our new customers are obtained through our advertisement in the "Rock Products"

Yours truly,

THE SHUART-FULLER MFG. CO.

E. J. Fuller

Secy & Treas.

FRANKLIN B. SPRY, Assoc. & Gen. Mgr.

ESTABLISHED 1876

JOHN A. OPP, Secy & Treas.

ASA K. DEWITT, Treas.



"Awarded"  
"GOLD MEDAL"  
FOR SUPERIOR EXCELLENCE  
WORLD'S FAIR  
ST. LOUIS 1904

Howells Mining Drill Co.  
Manufacturers of  
Mining Drills of Every Known Description  
Plymouth, Pa., U.S.A.



WESTERN UNION TELEGRAPHIC CODE SYSTEM  
CABLE ADDRESS: "HOWELLS PLYMOUTH"

May 9, 1910.

The Francis Publishing Company,

"Rock Products",

Chicago, Ill.

Gentlemen:

We have been advertising with you people continuously since 1906 and have found your publication very valuable to us.

We have noted with interest the steady growth of this publication and the interest you have always taken in our behalf has been greatly appreciated.

Yours very truly,  
Howells Mining Drill Company.

Franklin B. Spry  
President & Gen. Manager.





PLANT OF A. L. DE SHAZO, MEMPHIS, TENN.

## Miracle Pipe and Tile Molds

are used Exclusively at the above plant, which is a

### **MONEY MAKER**

\$15,000 Cleared above all expenses last year

## Miracle Molds Spell Success

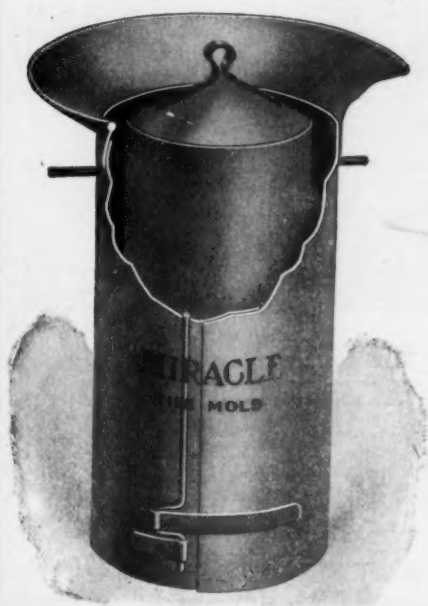
Wherever Miracle Molds are used, satisfaction always results.

Perfect work is assured. The price is right.

Thousands in use.

Standard molds of every size in stock, and molds for special purposes made promptly to order.

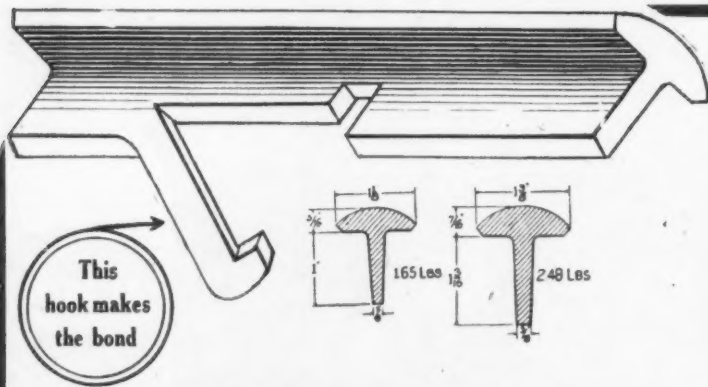
Write for our 28 page Sewer Pipe Catalog or  
our big Catalog on all lines of machinery.



## **MARSH COMPANY**

971 Old Colony Bldg., Chicago, Ill.

Tell 'em you saw it in ROCK PRODUCTS



## THE IMPERIAL HOOK CURB BAR

is a steel member to be embedded when the concrete is poured, forming a permanent protecting edge and acting as a re-inforcing member as well.

These bars have shear members which bond perfectly with the concrete. Rolled in straight lengths and in curves for street corners.

*Write for circulars.*

### Edward E. Buhler Company

MANUFACTURERS

Sales Office: 103 Park Avenue - - - New York City

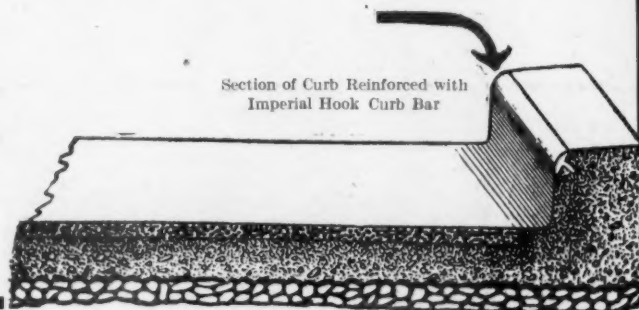
Factory: Pittsburg, Pa.

Western Agents: Waterhouse Price Co., San Francisco, Cal.

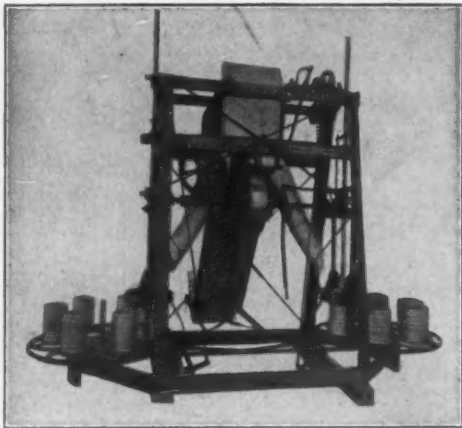
Louisiana Agents: Standard Paving & Construction Co., 321 Godechaux Bldg., New Orleans, La.

## Protect and Reinforce the Corners of Your Concrete Curbing

City engineers and contractors who have had trouble with the old sand-stone curbs or with plain concrete curbing, realize the need of a curb whose corner is properly protected against wear.



## THE McCracken Double Tile Machine



The McCracken Double Tile Machine makes all sizes of cement tile from 4 to 16 in. in diameter at the rate of from 10 to 20 tile per minute. Also makes building blocks or construction tile 8x8x16 at the rate of 2000 to 3000 per ten hour day.

The machine will make two different sizes of tile at the same time or building blocks and tile at the same time, or either end of machine can be used without using the other.

The machine has no cans and runs just as smooth at high speed as when running slow. Takes less labor per 1000 tile than any other machine.

Tile are packed so hard that the large sizes can be carried without the use of pallets. Machine is very simple and strong and runs very light, and elevator can be started and stopped without stopping the machine.

See the McCracken Machine before you buy. Write to

**The Sioux City Cement Machinery Company**  
219 4th Street, SIOUX CITY, IOWA

## The Chase Roller Bearing Car FOR CEMENT, BLOCK AND TILE



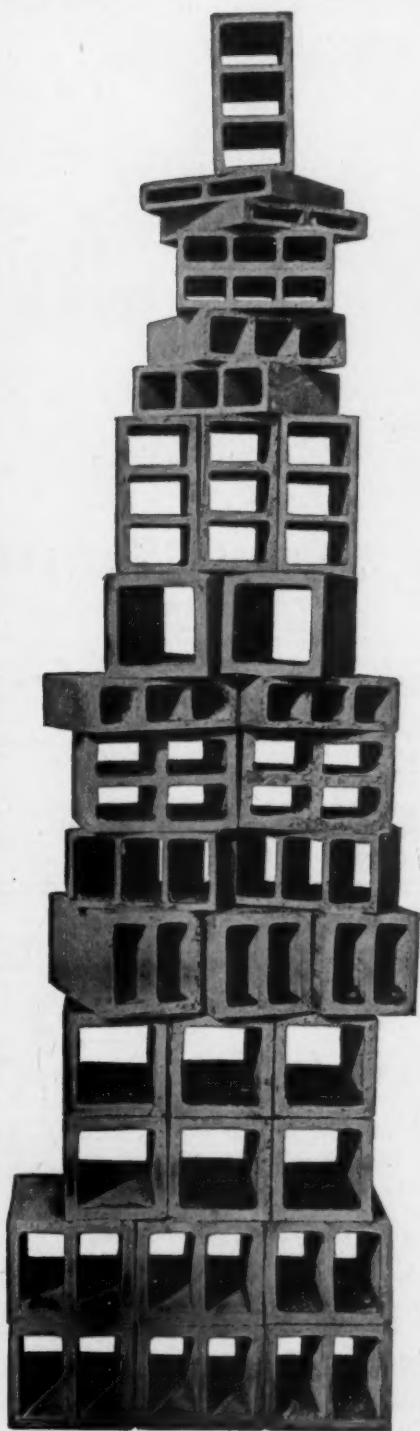
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**The Concrete Stone & Sand Co.**  
Youngstown, Ohio.



### Has The First *Pauly* Concrete Tile Plant Been Successful?

This question, which is usually first asked us by interested parties, is best answered by two facts:—1. During the year of 1909, the demand in Youngstown, Ohio, could not be satisfied, and (2) the plants capacity output is sold until the middle of the summer of 1910, in the **City of Youngstown alone**. In this connection it might be stated also that 4 tiles of our most common size, 8x8x16, can be manufactured from one cubic foot of concrete, with a labor cost of 50 per cent of the cost of concrete anywhere east of the Mississippi.

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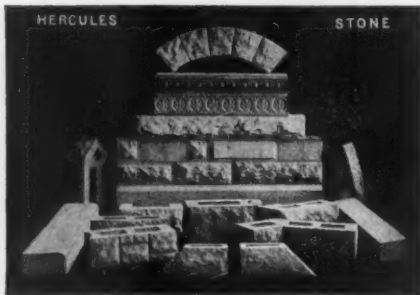
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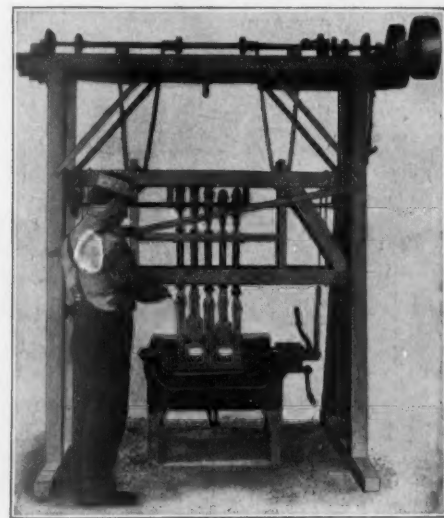
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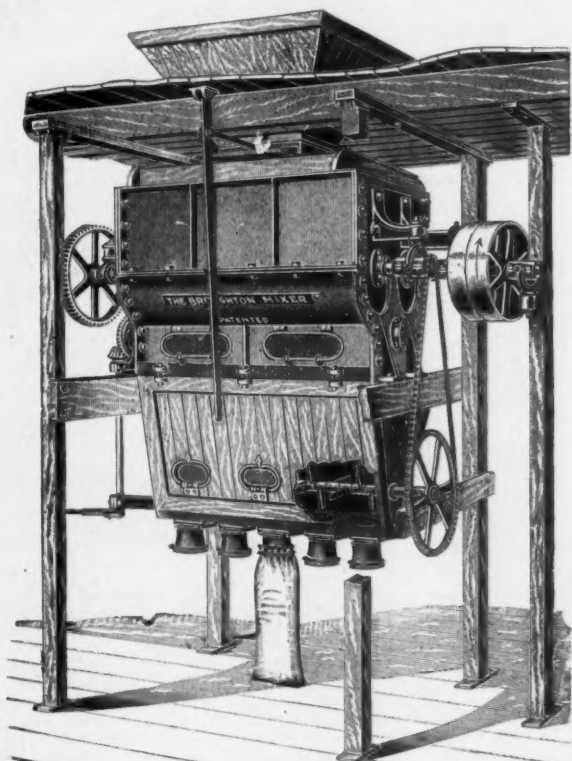
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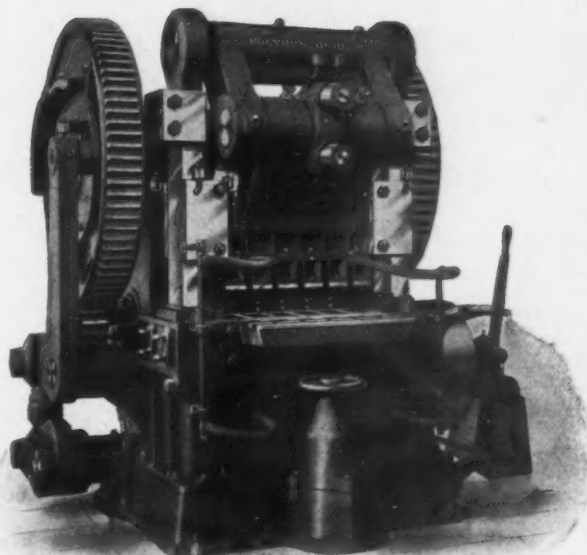


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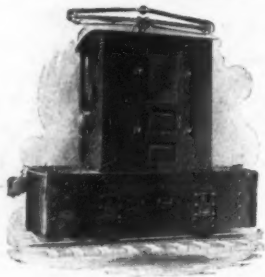
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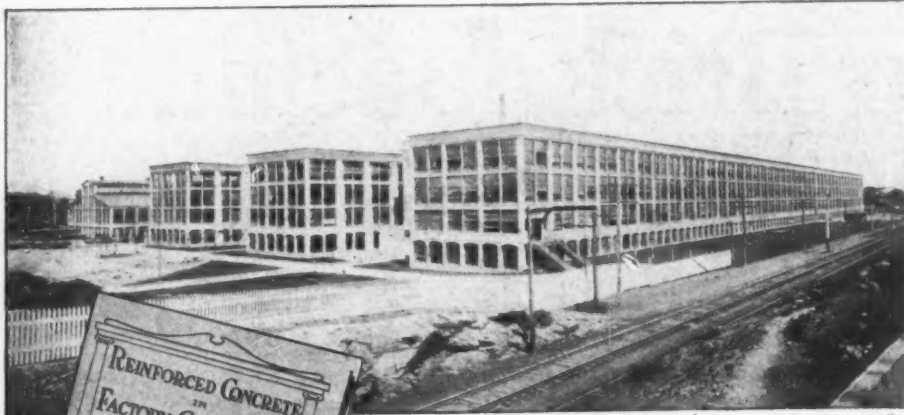


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